BLM

Preliminary Environmental Assessment

Upper Arrow Creek Watershed Area Plan

EA # MT060-08-055

September 2008

Lewistown Field Office

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Chapter 1
Introduction

Information in this chapter is organized into the following headings.

1.0 Purpose and Need

This environmental assessment (EA) evaluates rangeland health standards and analyzes impacts associated with renewing grazing permits within the Upper Arrow Creek watershed area. The purpose is to modify current grazing practices on some allotments so that progress can be made toward meeting the rangeland health standards. The EA is needed to address expiring grazing permits and address current management as it relates to resource conditions on some allotments where the rangeland health standards are not being met based on current assessments.

The Bureau of Land Management (BLM) is required to complete an environmental analysis when renewing 10-year grazing permits/leases. This watershed analysis will review the allotments in the Upper Arrow Creek Watershed area for compliance with the Standards and Guidelines for Rangeland Health. Existing permits/leases would be cancelled and new 10-year grazing permits would be offered at the conclusion of this effort.

Associated impacts of this action include, but are not limited to, construction of range improvement projects, modifications to current grazing practices, continuation of grazing practices and noxious weed control. Other management activities that impact upland and riparian health, water and air quality, and biodiversity will also be considered where necessary.

The EA will define the issues, detail the alternatives considered, describe the biological and physical characteristics of the affected environment, and explain the environmental consequences of each alternative. Individual allotments will be addressed on a site-specific basis.

1.1 Background

The BLM Lewistown Field Office (LFO), has undertaken a field office-wide planning effort, focused on implementing decisions in the Judith-Valley-Phillips Resource Management Plan (JVP RMP), approved in September 1994 (BLM 1994). The LFO administers about 1 million acres of public land in nine central Montana counties; an area approximately 225 miles long by 150 miles wide. The vastness of this jurisdictional area, combined with direction from the JVP RMP has prompted the LFO to delineate smaller, manageable planning units based on watershed units.

1.2 Location

The Upper Arrow Creek Watershed area is located in parts of Chouteau, Fergus and Judith Basin Counties, Montana. It contains portions of Dog, Taffy, Wolf and Upper Arrow Creeks, the Judith River and glaciated plains areas.

The watershed planning area encompasses approximately 1,375,020 acres. This includes 49,861 acres of land administered by the BLM, 144,962 acres of state land, 1,189 acres administered by the U.S. Fish & Wildlife Service and 1,179,008 acres of private land. A total of 64 BLM grazing allotments are authorized to 62 permittees/lessees.

1.3 Decision Needed

The LFO manager is the responsible official who must decide whether to implement decisions proposed in the preferred alternative. These decisions would include:

- Renewing grazing permits based on determinations of meeting Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Standards and Guidelines).

- Initiating and sustaining cooperative noxious weed control efforts.

- Implementing grazing management actions on allotments not meeting Standards and Guidelines or on allotments requiring other administrative changes.

1.4 Land Use Plan Conformance

The JVP RMP set forth the land use decisions and conditions guiding management of public land and minerals within the Upper Arrow Creek watershed area. All uses and activities within the area must conform to the decisions, terms and conditions described in this plan. Appendix A describes the land use plan guidance contained in the JVP RMP that is pertinent to this watershed.

The JVP RMP specifies that implementation of riparian/wetland decisions will be conducted on a watershed basis and will consider management of streams, water sources and uplands. Management of grazing will be in accordance with the grazing administration regulations found in 43 CFR Part 4100. Under the JVP RMP, livestock grazing will be managed through the development and monitoring of grazing or similar plans to maintain or improve ecological condition, enhance vegetation production, maintain and enhance wildlife habitat, and protect watersheds (pg. 12 of the approved plan).

The JVP RMP was amended by the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota, which was approved by the Secretary of the Interior in August 1997. Livestock grazing is managed under the Lewistown District (Lewistown and Malta Field Offices) Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997) (Appendices B and C). Standards are statements of physical and biological condition or degree of function required for healthy sustainable rangelands and guidelines focus on establishing and maintaining proper functioning conditions and the application of the guidelines is dependent on individual management objectives.

The Fire / Fuels Management Plan / Plan Amendment for Montana and the Dakotas (BLM 2003) also amended the JVP RMP. This amendment included language to bring the JVP RMP up to date with the Federal Wildland Fire Management Policy.

1.5 Issues and Objectives

1.5.1 Upland Health

Issue: The upland health standard is not being met for some of the upland areas on public lands. Livestock are a significant factor in some cases.

Short-term objective: Maintain the 31 allotments that are meeting the upland standard and maintain the 24 allotments that are not meeting the upland standard due to causes other than livestock grazing. Continue improvement on these allotments that are already making significant progress towards achieving health standards. Implement management actions that would ensure significant progress is made toward meeting the standard on the 9 allotments that are not meeting the standard due to current livestock management. Also, enter into cooperative weed control agreements (or re-emphasize current cooperative agreements) with permittees where allotments are not meeting the health standards due to noxious weed infestations.

Long-term objective: Maintain or improve upland areas so that all allotments are meeting the upland health standard within 10 years.

1.5.2 Riparian Health

Issue: Lewistown Standard 2 (Riparian and wetland areas are in proper functioning condition)is not being met for some of the riparian areas on public lands. Current livestock management is a significant factor in some cases.

Short-term objective: The BLM's goal is to improve and maintain riparian health on all streams within the planning area to Proper Functioning Condition or above. It is also to ensure the establishment and recruitment of cottonwood/willow and other desirable woody species on sites capable of supporting such species.

Long-term objective: Maintain or improve the 23.51 miles of riparian areas to Proper Functioning Condition or above within 10 years.

1.5.3 Water Quality

Issue: Lewistown Standard 3 (Water quality meets Montana State standards) is not being met on three waterbodies within the planning area where BLM is a significant landholder (Judith River, Arrow Creek, and Dog Creek).

Short-term objective: The BLM aims to address the water quality concerns on the water quality impaired streams by generating improving trends in condition. This would be accomplished by maintaining riparian and upland areas that are in good health and improving degraded riparian and upland areas.

Long-term objective: Maintain or improve the 23.51 miles of riparian areas to Proper Functioning Condition or above within 10 years.

1.5.4 Biodiversity

Issue: The biodiversity health standard is not being met on some allotments. Livestock are a significant factor in some cases.

Short-term objective: Maintain the 35 allotments that are meeting the biodiversity standard. Improve the remaining allotments that are not meeting the biodiversity standard, by implementing management actions. Ensure significant progress is made toward meeting the standard on the 9 allotments that are not meeting the standard due to current livestock management.

Long-term objective: Maintain or improve rangeland health so that all allotments are meeting the biodiversity standard or making significant progress within 10 years.

1.5.5 Noxious Weeds

Issue: Noxious weed populations are present on public, private, and state lands within the watershed.

Objective: Continue control of known noxious weed infestations and all newly identified infestations. Initiate new cooperative weed control agreements with grazing permittees/lessees within the watershed and re-emphasize current agreements. Eradicate any new populations of Category 3 weeds (see Noxious Weeds; Chapter 3.4 for a description of weed categories).

1.5.6 Privacy Act Notice

The BLM frequently receives inquiries from organizations, individuals and media for information about grazing permits/leases and permittees/lessees. The BLM's Washington Office, in consultation with the solicitor's office, has recommended that such inquires be treated as Freedom of Information Act requests. Doing so allows the BLM to provide consistent responses and to comply with a Privacy Act notice that encompasses grazing permits/leases. Until LFO receives further guidance, the names of livestock grazing permittees/lessees will not be used in planning documents.

Chapter 2
Alternatives

Two alternatives, No Action and Proposed Action, were developed to address the issues outlined in Chapter 1.

The National Environmental Policy Act (NEPA) and BLM policy require preparation of an EA as an integral component of livestock grazing permit issuance or renewal. At a minimum, the EA must address the following:

- Issuing a new permit with the same terms and conditions as the expiring permit/lease.

- Issuing a new permit based on Standards and Guidelines for Rangeland Health (proposed action).

The information in this chapter is organized into the following headings:

2.1 No Grazing Alternative

The BLM manages grazing on the public rangelands by statutory authority, i.e. the Taylor Grazing Act, the Federal Land Policy and Management Act (FLPMA) and the Public Rangelands Improvement Act. Under these statutes, the BLM is required to develop regulations to manage public land resources on a multiple-use and sustained yield basis.

Grazing allocations on newly acquired land will be based on management needs and objectives for the acquisition. A No Grazing alternative would be considered on newly acquired lands, or when permitting unallocated parcels. There are ten unallocated parcels of BLM land within this watershed area. Grazing use will not be addressed on these parcels in this document.

2.2 No Action Alternative

The No Action alternative is the continuation of current management.

2.2.1 Rangeland Administration

This alternative would renew the grazing permits/leases within the planning area with the same terms and conditions as the current permits/leases. No changes would be made and range improvement projects would not be proposed or constructed. Cooperative weed control would not be made a condition of the grazing permit/lease.

Livestock grazing would remain consistent with the current permit/lease and no new projects would be constructed to protect/enhance upland, riparian, biodiversity or water resource values. If allotments are currently not meeting standards and guidelines, this alternative would provide no measures for corrective actions. Issue objectives would not be met

with this alternative. Allotments that are not meeting, or not already making significant progress toward achieving standards, would not be in compliance with Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration (43 CFR 4180).

2.2.2 Noxious Weeds

Under the No Action Alternative, the BLM would continue current weed control efforts including chemical, biological and mechanical methods. Extreme caution would be taken to avoid damage to desirable vegetation, especially woody species.

The BLM would continue to develop cooperative agreements with livestock grazing permittees/lessees for noxious weed control on upland weed infestations. Under these agreements, the BLM agrees to provide the proper type and amount of herbicide and the permittees/lessees agrees to apply the herbicide. Application may be made by the properly licensed permittees/lessees or may be contracted to a licensed applicator at the permittee's/ lessee's cost. Biological control efforts would continue through release and dissemination of newly available and established biocontrol agents. Cooperative weed control agreements would be independent of the terms and conditions of renewed grazing permits/leases. The issue objectives for weeds would be minimally met in this alternative.

2.3 Proposed Action

This alternative proposes changes to better manage desirable vegetation, water, soils, wildlife habitat and noxious weeds. Management changes for allotments not meeting standards and guidelines for rangeland health are included in the proposed action listed under each grazing allotment in this section (Appendix I).

2.3.1 Rangeland Administration

Current grazing permits/leases would be cancelled and new 10 year grazing permits/leases would be offered with Standards and Guidelines for Rangeland Health and cooperative weed control agreements incorporated into the terms and conditions of the permit/lease.

Unless a more specific term and condition is proposed under Section 2.3.10, the following term and condition would be incorporated into permits/leases designated as custodial:

Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

In addition, allotment-specific terms and conditions may be added to individual permits/leases as identified under the proposed action for each allotment.

Pending and future transfers of permitted use would be approved where management actions, including terms and conditions, continue to meet standards for rangeland health and the objectives described in individual proposed actions for each allotment. On allotments where base property is controlled through lease agreements, new permits/leases would be generated as leases are renewed provided mandatory terms and conditions are unchanged. The term of new permits/leases would not extend beyond analysis of this document.

2.3.2 Standards and Guidelines for Rangeland Health

Standards for livestock grazing developed by the Resource Advisory Council (RAC) (Appendix B) state that rangelands should

be meeting or making significant and measurable progress toward meeting the upland, riparian, water quality, air and biodiversity standards for rangeland health. Significant progress toward meeting standards would be accomplished and adherence to guidelines would be followed through a variety of management techniques. Management on allotments that are not meeting standards would be modified to improve resource conditions and meet standards. Rangeland conditions which do not meet standards could be improved with changes to allotment management, including, but not limited to:

- increasing length of rest periods between grazing periods
- changing season of use
- altering livestock turnout location
- changing grazing intensity
- changing grazing duration
- improving livestock distribution

Improved livestock distribution could be achieved through construction of water developments and fences, selective salt and/or mineral placement, and changes to livestock turnout location and season of use. In some cases, fencing may be used to protect upland and/or riparian areas.

Guidelines for livestock grazing are based on the Guidelines for Grazing Management recommended by the RAC with input from the public (Appendix C). Upland objectives were developed for individual allotments on a case-by-case basis, based on vegetation production and ground cover objectives consistent with the site potential by soil series or ecological site. Under the proposed action, a variety of monitoring techniques that may include stubble height or percent utilization limits of key upland grass species would be applied as a monitoring tool to ensure upland objectives and guidelines for livestock grazing management are met. The stubble height or utilization limit is based on studies that demonstrate greater vigor of grasses grazed at moderated levels (Heady 1950, Troxel and White 1989, Vallentine 1990, Van Pollen and Lacey 1997). The forage utilization limit of key upland grass species would be limited to 4 inches (6 inch stubble height for bluebunch wheatgrass) or 50% at the end of the grazing season. Appropriate and timely action would be taken if the stubble height or percent utilization measurements indicate that grazing management is not achieving the desired upland objectives or if significant progress is not being made toward meeting standards.

Although it is understood that riparian stubble height and woody species utilization does not fill the role of a long-term management objective, they can be used as a direct and indirect guide for current grazing impacts to riparian areas (Clary and Leininger, 2000). Stubble height and woody species utilization will be used as indicators of the current year's grazing impacts.

Utilization of key, palatable, woody species such as Salix spp. (willows) and Populus spp. (cottonwoods) would be limited to light-to-moderate browsing as described in "Browse Evaluation By Analysis of Growth Form, Volume 1, Methods for Evaluating Condition and Trend" (Keigley and Frisina, 1998).

Utilization of key riparian grasses would be limited to an average 4" stubble height.

A monitoring strategy for each reach would be decided based upon the inventory data. The LFO would monitor the soil, hydrology, or vegetation attribute which caused the reach to be at risk or nonfunctional (the NO's on the Proper Functioning Condition checklist). For example, if it was a vegetation attribute such as large percentages of bare ground or disturbance related plant species (i.e. Kentucky Bluegrass or Foxtail Barley), the monitoring strategy would be greenline composition and successional status found in Winward (2000). If a soil or hydrology attribute such

as streambank alteration or lack of root mass protection is the cause of degradation, the monitoring strategy would be greenline stability rating and percent streambank alteration.

The utilization of preferred woody species and key riparian grasses and streambank alteration measurements are not objectives, but rather they are indicators of impending resource damage and triggers for movement of livestock. If intense browse levels are noted on preferred woody species or the 4" stubble height requirement is met, it is time for livestock to be moved. The browse level on preferred woody species needs to be looked at where there are enough plants to conduct a browse survey. Widely spaced, individual plants are not appropriate.

Failure to meet the stubble height requirement or intense browsing would prompt an assessment of resource condition and indicate the need to make appropriate changes.

Although there are many streams within the planning area's boundary that are listed in Montana Department of Environmental Quality's (MDEQ) water quality database, the following discussion is geared towards the listed waterbodies that BLM land borders or is a significant landowner within the watershed. These streams include the Judith River, Dog Creek, and Arrow Creek. BLM has evaluated resource conditions and plans to address allotments with degraded upland and riparian range condition in order to improve water quality. Arrow Creek is listed in water quality category 2B, which means that available data and/or information indicate that a water quality standard is exceeded due to an apparent natural source in the absence of any identified anthropogenic sources.

Air quality in the watersheds within the planning area is generally considered good to excellent; the air quality standard is being met on all allotments.

The biodiversity standard is being met on the majority of allotments within the planning area. Primary causes for the biodiversity standard not being met are due to predominance of non-native vegetative species such as crested wheatgrass, noxious weeds and annual invasive species. Allotments may also fail to meet the biodiversity standard due to insufficient residual vegetative cover and alteration of community composition caused by livestock grazing. Management actions are primarily proposed on allotments not meeting the biodiversity standard due to livestock grazing. Implementation of the proposed action would lead to significant progress toward meeting the standard.

During periods of drought, livestock grazing on public lands would be administered in accordance with the BLM's Montana/ Dakotas drought policy. (Appendix D)

A summary table of standards determinations for each allotment in the Upper Arrow Creek Watershed area is located in Appendix E. A description of monitoring and evaluation is found in Appendix K.

2.3.3 Range Improvement Projects

Several range improvement projects are proposed which include livestock water developments and cross-fences (Appendix H). Range improvements proposed by the BLM and permittee/lessees are discussed under the proposed action for individual allotments. It is important to note that range improvement project funding occurs on a yearly basis and although variable from year to year, funding is typically limited and never fulfills the total needs. In addition, even with adequate funding, staffing may limit the amount of project work that can occur in any given year. With this in mind, projects proposed within this watershed plan would

be prioritized and implemented based on the following key considerations:

- Allotments not meeting rangeland health standards; livestock grazing is a significant factor.

- Important resource values exist on the allotment (wildlife habitat, riparian/ wetland habitat, fisheries habitat, etc.).

- Multiple resource value benefits would occur from the proposed action (wildlife, range, riparian, etc.).

- Projects are components of a grazing management system (e.g., deferment, rest, etc.).

Regardless of funding and range improvement projects, permittees/lessees must manage livestock according to standards and guidelines (Appendices B and C). Proper livestock grazing management would ensure that allotments not meeting standards would begin to make significant progress towards meeting standards by the start of the 2009 grazing season. Maintenance of all existing and proposed projects would be the responsibility of the permittees/lessees. Projects would not be limited to the list; additional projects could be initiated to improve management and meet standards.

Cultural resource surveys would be conducted prior to implementation of range improvement projects, including vegetation treatments. Monitoring of noxious weeds would be conducted for two years following any surface disturbance.

2.3.4 Noxious Weeds

Noxious weeds have been identified on uplands and riparian areas within the planning area (Appendix J). The proposed action would implement an aggressive, integrated weed control effort. Weed control efforts would be increased where identified in the proposed action for each allotment.

The BLM would incorporate cooperative weed control agreements into the terms and conditions of ten-year grazing permits/ leases with noxious weed infestations. On all allotments, the following term and condition would be added to address existing and future infestations of noxious weeds:

Cooperative agreements between BLM and the permittee(s)/lessee(s) will be established for control of existing or new infestations of noxious weeds found in the allotment(s) during the term of the permit/lease in accordance with the Upper Arrow Creek Watershed Area Plan.

Cooperative weed control agreements could be initiated any time during the tenure of a permit/lease if weeds are identified on an allotment. Under these agreements, the BLM would provide the proper type and amount of herbicide and the permittees/ lessees would apply the herbicide. Application would be made by the properly licensed permittee/lessee or contracted to a licensed applicator at the permittee's/ lessee's cost. Permit terms and conditions would be modified to reflect the identification of noxious weeds and implementation of a cooperative weed control agreement.

Continued inventory and monitoring would provide weed infestation trend data. Noxious weed inventory and monitoring within the watershed area would be a continual, dynamic workload accomplished by permanent and seasonal BLM employees, private landowners and cooperating agency personnel. Inventory and monitoring data would be compiled by the LFO weed specialist and used to analyze the effectiveness of weed control efforts, project infestation trend patterns and provide guidance for future weed control planning and implementation.

The chemical component of the integrated weed control program would be closely monitored by the LFO weed specialist. All herbicide applications would utilize BLM approved herbicides (BLM annually revises an approved herbicide formulation list) administered by experienced, licensed applicators. All applications would comply with label restrictions and guidelines. In riparian areas, extreme caution would be taken to avoid damage to desirable vegetation, especially woody species. Herbicide applications within a riparian zone or within 100 feet of any body of water would be limited to hand spot spraying. Site-specific exceptions could be granted if woody or desirable forb species are absent within a riparian zone. BLM would utilize permanent and seasonal employees to implement site-specific herbicide prescriptions which would be identified outside of areas permitted for livestock grazing.

Biological control efforts would continue through release, dissemination and monitoring of newly available and established biocontrol agents. The BLM would continue a cooperative relationship with the Agricultural Research Service (ARS) by providing suitable experimental and research sites and assisting with associated biocontrol projects. Biological control would continue to be a valuable tool for control of Category 1 weeds (effective biocontrol of Russian knapweed and whitetop is being researched, but is not available at the time this document was written).

Noxious weed control measures would apply to all wildfire areas. Post-burn inventories / assessments would indicate if weed treatment is needed. During the livestock grazing rest period, (if required) the BLM would continue weed treatment as necessary. After the livestock grazing rest period, BLM would work with permitees/ lessees in accordance with the cooperative weed control agreements discussed above.

2.3.5 Black-tailed Prairie Dogs

The JVP-RMP directs that the BLM will maintain or manage prairie dog towns on public lands based on the values or problems encountered. Prairie dog towns would not be actively managed within the Upper Arrow Creek planning area. Four prairie dog towns have been documented within the planning area. There are 3.1 acres near Shonkin Lake, 9 acres near Kingsbury Lake, and two adjacent towns (2 and 7 acres) near Flat Creek. All four of the documented prairie dog towns were on BLM parcels that are not allocated for livestock grazing.

2.3.6 Rocky Mountain Goats

Seven Rocky Mountain goats were introduced to Square Butte in 1971. The goats have done very well over the years. In 1996 the JVP RMP identified about 2,000 acres of crucial goat habitat on Square Butte. Of the 2,000 acres of goat habitat, approximately 1320 acres are not allocated for livestock grazing and 660 acres are within 3 grazing allotments; 80 acres in Pownal (9753), 80 acres in Upper Cowboy Creek (9827) and 500 acres in Arrow Creek (9783) allotments. The Square Butte goat population had gained the reputation of being one of the most productive and trophy quality herds in Montana. In the last few years the number of goats on Square Butte has been declining and the associated number of hunting licenses issued for hunt area 447 has dropped accordingly. Montana Fish, Wildlife and Parks (MFWP) biologists report that a significant number of goats each year are moving west to habitat on Round Butte and in the Highwood Mountains. Local biologists believe that conifer encroachment on all aspects of Square Butte has lowered the quality of the goat habitat to the point that they are looking for better habitat. MFWP suggests that conifer removal on portions of Square Butte would improve the goat habitat to the point they would prefer to remain on Square

Butte. To address these concerns, BLM plans to consider prescribed burning and other appropriate methods of improving goat habitat. Impacts associated with that proposal would be analyzed in a separate document.

2.3.7 Sage Grouse

The JVP RMP directs that the BLM will improve the quality and quantity of nesting, brood rearing and winter habitat for upland game birds. BLM will provide residual grass and forb cover for upland bird and waterfowl nesting. BLM will manage for a variety of palatable forbs and maintain big and silver sagebrush on sage grouse wintering and nesting areas. Less than half of this planning area is considered sage grouse habitat. The BLM land adjacent to the west side of Arrow Creek from the confluence of the Missouri River upstream to Highway 80 and the land around Winifred east of Judith River breaks and south of the Missouri River breaks is considered sage grouse habitat. There are four active sage grouse leks in the Arrow Creek area and 7 active leks on or near BLM land in the Winifred area. Allotments not meeting the upland health standard would require some degree of change in grazing management.

Regardless of the grazing management prescription, it is essential that each allotment provide some area of adequate nesting cover each spring. Upper Arrow Creek allotments not meeting standards would be monitored more closely than others, but all sage grouse habitat would continue to be evaluated periodically.

2.3.8 Wildland Fire Management

Fire suppression would be in accordance with the Fire/Fuels Management Plan Environmental Assessment/Plan Amendment for Montana and the Dakotas (July 2003) and the Central Montana Fire Zone, Lewistown Field Office (LFO), Fire Management Plan (September 2004).

The majority of the planning area is located in the LFO Breaks Fire Management Unit (FMU). This FMU has been designated as Management Category C in the Fire/Fuels Management Plan Environmental Assessment/Plan Amendment for Montana and the Dakotas (July 2003). The C designation identifies areas where fire is a desired ecosystem management tool. Fire could be a positive influence in much of this area and restoration of natural fire regimes would be encouraged where practical. However, each fire occurrence would have special consideration. Obvious concerns focus around structural developments, croplands, livestock and livestock forage needs. Social and political considerations would dictate management of each fire occurrence. Appropriate fire suppression based on current fire danger, resource availability and predicted weather would be used to ensure safety of fire suppression personnel, reduce cost of fire suppression and provide an opportunity to return fire to its natural place in the ecology of the area.

There are some scattered lands in the watershed area located in the Range/ Grasslands FMU that are designated B. The B designation identifies areas where unplanned fire is likely to cause negative effects. Emphasis in B Category areas are prevention/education and suppression.

Requirements for resting areas from livestock grazing following fire would depend on a variety of factors including resource objectives, the type of fuel, time and intensity of burn, accessibility of the burned area to livestock, and post-burn climatic factors. Typically, a two growing season rest would be required following a wildfire or prescribed fire.

2.3.9 Adaptive Management

Adaptive management would be used to alter the course of management if the proposed action is failing to achieve goals and objectives, or if circumstances require

the need to make adjustments to management.

Adaptive management is a management approach that recognizes in advance that no amount of planning would be able to consider every possible combination of events, contingencies, or foresee the degree of impact from unplanned events or new management direction. The adaptive management approach recognizes the need for flexibility to cope with changes and provides mechanisms to allow corrective actions and adjustments to occur based on monitoring results. Achieving standards for rangeland health with goals and objectives outlined in this plan would be the catalyst for change.

Under adaptive management, various actions could be considered to address problematic livestock grazing issues, including, but not limited to:

- increasing length of rest periods between grazing periods
- changing season of use
- altering livestock turnout location
- changing grazing intensity
- changing grazing duration
- improving livestock distribution

Improved livestock distribution could be achieved by constructing water developments and fences, selective salt and/or mineral placement, and changes to livestock turnout location and season of use. In some cases, exclosure fencing would be used to protect riparian areas.

If monitoring indicates that allotments are not meeting standards and are not making significant progress towards achieving standards, corrective actions would be implemented.

2.3.10 Proposed Action for Individual Allotments in the Upper Arrow Creek Watershed Area.

(1) ANDERSON COULEE #10027
Public acres – 1739
AUMs - 201
Public land – 59%
Livestock No. – 86 cattle
Season of Use –11/01-2/28
Type Use - Active

Meeting Upland Standard:
- No.

Upland Objectives:
- Increase production of cool season bunchgrasses and perennial forbs. Reduce bare ground cover and annual invasive species.

Meeting Riparian Health Standard:
- No.

Riparian Objectives:
- Improve .6 miles of Judith River to proper functioning condition or above.
- Control spotted knapweed and Canada thistle.
- Continue to support regeneration of cottonwood and sandbar willow.

Meeting Water Quality Standard:
- No, the Judith River from Big Spring Creek to the mouth of the Missouri River is listed as a water quality impaired stream by the Montana Department of Environmental Quality (MDEQ).

Water Quality Objectives:
- Maintain streambank vegetative cover of obligate wetland plant species and sandbar willow.

Meeting Biodiversity Standard:
- No.

Biodiversity Objectives:
- Continue weed control and grazing practices to increase forage production.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #5, #9, #10, and #12 (Appendix C). Failure to conform with #5, #10 and #12 is related to historical livestock use and not current grazing management practices. Current grazing practices were determined to be making significant progress toward achieving riparian health standards and were not a factor in failing upland standards. Non-adherence with #9 is due to the presence of noxious weeds. Conformance to this guideline would be addressed by implementation of the proposed action.

Proposed Action: This allotment has recently transferred under new ownership. Pasture 3 was approved for late fall/winter use which is allowing for the existing vegetation to be deferred from livestock use until after the growing season.

The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
86 Cattle	11/1 -2/28	59%	Active	200

Total permitted use would remain 201 AUM's.

An Exchange-of-Use agreement occurs within the allotment. 90 acres/23 AUM's of deeded lands owned by the operators of Anderson Coulee are located in Section 28 (T.21 N., R.17 E.). These lands are offered in exchange for 218 acres/23 AUM's of BLM lands located in Section 21 (T.21 N., R.17 E.). BLM lands are fenced with the Anderson Coulee Allotment but are allocated to the Smith-Bolstad Common.
The current agreement expires February 28, 2009. If the exchange-of-use agreement is not renewed, 23 AUM's of federal permitted use would be reallocated to the Anderson Coulee Allotment. The term of the new agreements would not exceed the term of the grazing permit. The agreements would be subject to cancellation prior to expiration if conditions no longer conform to provisions outlined in 4130.6-1.

Canada thistle and spotted knapweed were inventoried in the riparian area of this allotment. The BLM would develop and implement a weed control cooperative agreement with the permittee. Weed control efforts would emphasize prevention of spread into the uplands and containment and control of existing weed populations within the riparian zone.

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(2) ANTELOPE COULEE #09668
Public acres – 40
AUMs - 10
Public land - 100%
Livestock No. – 1 cattle
Season of Use – 3/1-2/28
Type Use- Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Continue upward trend and maintain high seral ecological site index.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action:

Based on management objectives and limited resources, this allotment would continue to be administered as custodial use. The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	10

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(3) ARROW CREEK #09783
Public acres –2876
AUMs - 227
Public land – 17%
Livestock No. – 150 cattle
Season of Use – 3-1 to 5-30
9-1 to 2/28
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Continue upward range trend and maintain good vegetative cover.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The following use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
150 Cattle	3/1 -5/30 9/1- 2/28	17%	Active	76 152

Total permitted use would remain 227 AUMs.

The base property associated with the Arrow Creek Allotment has changed ownership. In April of 2007, representatives of the new ownership submitted the appropriate transfer fee and Grazing Application forms 4130-1, 4130-1a, 4130-1b and 4120-8 were signed and submitted to the BLM. The proposed action includes the transfer of permitted use to the new owners. The grazing applications are consistent with all mandatory and other terms and conditions of the permit analyzed in this document.

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(4) BELT CREEK #09666
Public acres – 240
AUMs - 48
Public land – 100%
Livestock No. – 4 cattle
Season of Use – 3/1 to 2/28
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward range trend and improve to high seral stage.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain good herbaceous cover available for ground nesting birds.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on management objectives and limited resources, the following use would be modified as follows:

Livestock # and kind	Season	Public land	Type use	AUM
4 Cattle	3/1 -2/28	100%	Custodial	48

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(5) BIG COULEE #09764
Public acres – 320
AUMs - 23
Public land – 100%
Livestock No. – 2 Cattle
Season of Use – 3/1 – 2/28
Type Use - Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend.

Meeting Riparian Health Standard:
- No riparian habitat on BLM land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain sagebrush and decreaser bunchgrasses within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on management objectives and limited resources, this allotment would continue to be administered as custodial use. The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
2 Cattle	3/1 -2/28	100%	Custodial	23

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(6) BIG COULEE EAST #09656
Public acres – 5273
AUMs - 366
Public land – 100%
Livestock No. – 68 cattle
Season of Use – 6/10 – 11/20
Type Use - Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain vegetation in high seral stage or improve to potential natural community.
- Maintain upward trend.

Meeting Riparian Health Standard:
- No riparian habitat on public lands within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain sagebrush and winterfat through allotment. Also, maintain good nesting cover on ridgetops.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
68 Cattle	6/10 -11/20	100%	Active	367

Total permitted use would remain 366 AUM's

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(7) BIG LAKE #09833
Public acres – 34
AUMs - 15
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 3/1 – 2/28
Type Use - Custodial

Meeting Upland Standard:
- No. Uplands dominated by crested wheatgrass.

Upland Objectives:
- Manage crested wheatgrass to optimize native species.

Meeting Riparian Health Standard:
- No. Abandoned railroad ROW dissects the wetland.

Riparian Objectives:
- Maintain vegetative cover of riparian buffer zone around Big Lake.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Maintain vegetative cover of riparian buffer zone around Big Lake.

Meeting Biodiversity Standard:
- No.

Biodiversity Objectives:
- Maintain nesting cover along shore of Big Lake.
- Manage crested wheatgrass to optimize native species.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	15

The base property associated with the Big Lake Allotment has been held in an estate which has recently been settled. In March of 2008, representatives of the new ownership submitted documentation of ownership, and appropriate transfer fees with Grazing Application forms 4130-1, 4130-1a, and 4130-1b. The proposed action includes the transfer of permitted use from the estate to the new owners. The grazing applications are consistent with all mandatory and other terms and conditions of the permit analyzed in this document.

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(8) BOYCE C INDIVIDUAL #20015
Public acres – 1681
AUMs - 215
Public land – 100%
Livestock No. – 36 cattle
Season of Use – 5/1 – 10/31
Type Use - Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain native vegetation, especially bluebunch wheatgrass, at current levels to reduce spread of Japanese brome.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain upland forage and cover necessary to support elk, mule deer and Merriam's turkey.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
36 Cattle	5/1 -10/31	100%	Active	218

Total permitted use would remain 215 AUM's.

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(9) BROWN COULEE #20014

Public acres – 1420
AUMs – 240
Public land – 52%
Livestock No. – 66 cattle
Season of Use – 3/1 to 3/31
9/1 to 2/28
Type Use - Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain residual forage cover and predominance of bluebunch wheatgrass, green needlegrass and western wheatgrass.

Meeting Riparian Health Standard:
- Yes.

Riparian Objectives:
- Maintain or improve the riparian area health on .5 miles along the Judith River to Proper Functioning Condition or above.
- Maintain streamside vegetation and regeneration of cottonwood and willow.

Meeting Water Quality Standard:
- No, the Judith River from Big Spring Creek to the mouth of the Missouri River is listed as a water quality impaired stream by the Montana Department of Environmental Quality (MDEQ).

Water Quality Objectives:
- Address water quality concerns by maintaining the reach of Judith River within the allotment in Proper Functioning Condition.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.
- Limit expansion of Canada thistle and spotted knapweed along the Judith River.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
66 Cattle	3/1 -3/31 9/1-2/28	52%	Active	35 204

Total permitted use would remain 240 AUM's.

Range Improvements: The BLM and permittee would enter into a range improvement cooperative agreement for weed control. Control efforts would emphasize prevention of spread into the uplands and selective control within the riparian areas to prevent damage to non-target species and water resources.

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(10) BURNSIDE # 20018

Public acres – 240
AUMs – 69
Public land – 100%
Livestock No. – 6 cattle
Season of Use – 3/1-2/28
Type Use - Custodial

Meeting Upland Standard:
- No, there is an abundance of crested wheatgrass and clubmoss. Current livestock management was not determined to be a significant factor.

Upland Objectives:
- Increase bunchgrass and native species and reduce clubmoss cover.
- Manage crested wheatgrass to optimize native species.

Meeting Riparian Health Standard:
- No, 1 mile of Rose Creek was rated non-functional due to channel incisement, however streambanks are becoming well vegetated with sedges indicating significant progress is being made toward achieving this standard.

Riparian Objectives:
- Continue improvements in riparian health to Proper Functioning Condition or above.
- Continue to support streambank vegetative cover of sedges and rushes.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Continue to support streambank vegetative cover of sedges and rushes.

Meeting Biodiversity Standard:
- No, due to the high occurrence of crested wheatgrass and clubmoss not related to current livestock management.

Biodiversity Objectives:
- Maintain sagebrush establishment in areas of crested wheatgrass.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #1, #2, #4, #5, #10, #11, #12, #13 (Appendix C). Failure to conform with guidelines #1, #2, #4, #5, #10, #11 and #12 is related to historical livestock use and not current grazing management practices. Current grazing practices were determined to be making significant progress toward achieving riparian health standards. Non-adherence with #13 is due to historical planting of crested wheatgrass.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
6 Cattle	3/1 -2/28	100%	Custodial	69

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(11) CASSIDY PLACE #09679

Public acres – 298
AUMs – 26
Public land – 100%
Livestock No. – 4 cattle
Season of Use – 5/1 to 10/31
Type Use - Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend and ecological site index at near potential natural community.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain bluebunch wheatgrass and sagebrush habitats within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
4 Cattle	5/1 -10/31	100%	Custodial	26

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(12) COWBOY CREEK #09831
Public acres – 160
AUMs – 25
Public land – 100%
Livestock No. – 3 cattle
Season of Use – 6/1-12/31
Type Use - Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward range trend.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain herbaceous groundcover within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
3 Cattle	6/1 -12/31	100%	custodial	25

The base property associated with the Cowboy Creek Allotment has changed ownership. Upon receipt of the transfer fee, documentation of control of base property and grazing application forms 4130-1, 4130-1a, and 4130-1b, BLM would transfer the allotment to the new owners of the base property. The proposed action includes the transfer of the permitted use to the new owner. Transfer of the lease constitutes a name change only. Management of the allotment would remain within the family of the current lease holder. Day-to-day management activities would not be changed. The grazing applications would be consistent with all mandatory and other terms and conditions of the lease analyzed in this document.

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(13) COWBOY STEELE CREEK #19814
Public acres – 3450
AUMs – 215
Public land – 100%
Livestock No. – 31 cattle
Season of Use – 6/1-12/31
Type Use - Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend and mid to late seral ecological site index.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Increase amounts of bluebunch wheatgrass where lacking.
- Maintain upward trend and abundance of winterfat.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current use would be continued as follows:

Livestock # and kind	Season	Public land	Type use	AUM
31 Cattle	6/1 -12/31	100%	Active	218

Total permitted use would remain 215 AUM's.

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(14) CUTBANK CREEK #20007
Public acres – 40
AUMs – 12
Public land – 100%
Livestock No. – 1
Season of Use – 3/1 to 2/28
Type Use – Active

Meeting Upland Standard:
- No, the allotment contains a large percentage of crested wheatgrass; current livestock management is not a factor.

Upland Objectives:
- Allow for natural reestablishment of native species.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- No, due to large percentage of crested wheatgrass.

Biodiversity Objectives:
- Increase biodiversity allowing for reestablishment of native vegetation.

Conforms with Guidelines for Livestock Grazing Management:
-No, does not conform with Guidelines #12 and #13. Failure to conform with guideline #12 is not related to current grazing management practices. Failure to adhere with #13 is due to historical planting of crested wheatgrass.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be authorized as currently permitted. Type use would be changed from active to custodial. The permit would be offered as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	12

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(15) DAVIS CREEK #09861
Public acres – 3088
AUMs – 213
Public land – 100%
Livestock No. – 18 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend.
- Increase bunchgrasses in areas that are lacking.

Meeting Riparian Health Standard:
- No, 1.3 miles of Arrow Creek, .4 miles of Davis Creek, and .3 miles of Ole Coulee were rated Functioning-At-Risk. All three sites were determined to have an upward trend and are making significant progress toward achieving riparian health standards.

Riparian Objectives:
- Maintain or improve areas of Proper Functioning Condition to PFC or above.

- Improve Arrow Creek, Davis Creek, and Ole Coulee to Proper Functioning Condition or above.
- Reduce abundance and limit spread of noxious weeds, primarily Canada thistle, whitetop and spotted knapweed.

Meeting Water Quality Standard:
- No, Arrow Creek from Surprise Creek to the mouth (Missouri River) is listed as water quality impaired by Montana Department of Environmental Quality (MDEQ). The probable cause is naturally occurring iron. Current BLM management is likely not contributing to water quality concerns.

Water Quality Objectives:
- Continue management practices that promote continued improvement and maintenance of healthy upland and riparian areas.

Meeting Biodiversity Standard:
- No, due to noxious weeds.

Biodiversity Objectives:
- Maintain occurrence of perennial grasses, sagebrush and greasewood within the allotment.
- Reduce abundance of noxious weeds and control spread to other areas.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Due to significant upland and riparian values identified on the allotment, BLM proposes including the following term and condition to reflect current management that is resulting in significant progress being made towards achieving standards.

BLM lands located within the Davis Allotment will be managed in a three-pasture rotation grazing system in conjunction with adjacent deeded lands.

The permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
18 Cattle	3/1 -2/28	100%	Custodial	213

Range Improvements: The BLM and permittee would enter into a range improvement cooperative agreement for weed control. Control efforts would emphasize prevention of spread into the uplands and selective control within the riparian areas to prevent damage to non-target species and water resources.

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(16) DEMARS #20026
Public acres – 40
AUMs – 11
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 3/1-12/31
Type Use - Custodial

Meeting Upland Standard:
- No, due to the abundance of crested wheatgrass not related to current livestock management.

Upland Objectives:
- Manage crested wheatgrass to optimize reestablishment of native species.

Meeting Riparian Health Standard:
- No, .4 miles of Dog Creek were rated Functioning- At-Risk due to channel incisement. However, streambanks are becoming well vegetated with desirable species indicating significant progress is being made toward achieving this standard.

Riparian Objectives:
- Continue upward trend of associated riparian habitat along Dog Creek.

Meeting Water Quality Standard:
- Yes, Montana Department of Environmental Quality lists Dog Creek from Little Dog Creek to Cutbank Creek in water quality category 3 which means that there were insufficient data to assess any use.

Water Quality Objectives:
- Maintain streambank vegetative cover of sedges and rushes.

Meeting Biodiversity Standard:
- No, due to abundance of crested wheatgrass.

Biodiversity Objectives:
- Maintain sagebrush within allotment.
- Allow for natural reestablishment of native vegetation.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #12 and #13. Failure to conform with guideline #12 is not related to current grazing management practices. Failure to adhere with #13 is due to historical planting of crested wheatgrass.

Proposed Action: This allotment would continue to be administered as custodial use. BLM proposes creating a new Allotment number for this portion of the grazing authorization. There would be no changes in the mandatory terms and conditions. The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	11

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(17) EAGLE BUTTE #09856
Public acres – 520
AUMs – 37
Public land – 100%
Livestock No. – 3 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain late-seral vegetation including a variety of bunchgrass species.

Meeting Riparian Health Standard:
- No riparian habitat occurs on public lands within this allotment.

Meeting Water Quality Standard:
- N/A.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain sagebrush and bunchgrasses within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
3 Cattle	3/1 -2/28	100%	Custodial	37

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(18) EAST PEAK #19844
Public acres – 80
AUMs – 25
Public land – 100%
Livestock No. – 6 Cattle
Season of Use – 6/1 to 10/1
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward range trend.
- Improve regeneration of aspen.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.
- Improve regeneration of aspen.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
6 Cattle	6/1 -10/1	100%	Custodial	25

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(19) ERIE #20030
Public acres – 800
AUMs – 146
Public land – 100%
55%
Livestock No. – 1 cattle
98 cattle
Season of Use – 4/1 to11/30
6/16 to 9/03
Type Use – Custodial (Line 1)
Active (Line 2)

Meeting Upland Standard:
- No, however continued application of the allotment management plan is allowing for increased amounts of bluebunch wheatgrass and green needlegrass.

Upland Objectives:
- Increase abundance of native bunchgrass species in areas of crested wheatgrass.

Meeting the Riparian Health Standard:
- N/A, limited riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- No, due primarily to the presence of crested wheatgrass in the western portion of the allotment.

Biodiversity Objectives:
- Manage crested wheatgrass to optimize reestablishment of native species.

Conforms with Guidelines for Livestock Grazing Management:
-No, does not conform with Guideline #9.

Proposed Action: The Erie Allotment contains 10 pastures. These pastures are managed in a short duration, high intensity grazing system. Typically pastures are utilized in a modified, rest-rotation often with multiple pastures receiving rest. The current management was determined to be yielding significant progress towards meeting rangeland health standards. BLM proposes current management continue, however, the existing permit schedule does not allow for early or late season use. The permit would be modified as follows:

Livestock # and kind	Season	Public land	Type use	AUM
85 Cattle	6/1 to 9/3	55	Active	146

A cooperative noxious weed control agreement would be established to control noxious weeds.

An additional term and condition would be added to the permit:

Pastures #3a, #4 and #5 may be used from May 15 to facilitate use of crested wheatgrass so long as total permitted use for the allotment is not exceeded.

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(20) GALLATIN #20011
Public acres – 170
AUMs – 51
Public land – 100%
Livestock No. – 14 cattle
Season of Use – 6/1-9/15
Type Use – Active

Meeting Upland Standard:
- No, historical livestock grazing has caused a shift in functional structural groups. Residual cover indicates that current livestock grazing is limited and not contributing to standards not being met.

Upland Objectives:
- Increase amounts of bluebunch wheatgrass.

Meeting Riparian Health Standard:
- Yes.

Riparian Objectives:
- Maintain streambank vegetative cover of sedges and rushes.

Meeting Water Quality Standard:
- No, Dog Creek from Cutbank Creek to the mouth of the Missouri River is listed as water quality impaired by Montana Department of Environmental Quality (MDEQ). Probable causes are nitrate/nitrite and sedimentation/siltation.

Water Quality Objectives:
- Maintain or improve Dog Creek to Proper Functioning Condition or above.
- Maintain streambank vegetative cover of sedges and rushes.

Meeting Biodiversity Standard:
- No, due to lack of bunchgrasses.

Biodiversity Objectives:
- Increase bunchgrasses within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would be modified to be administered as custodial use. The current mandatory terms and conditions would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
14 Cattle	6/1 -9/15	100%	Custodial	51

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(21) GREEN-ROYCE #20034
Public acres-400
AUMs – 68
Public land – 100%
Livestock No. - 5 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain vegetation in current seral stage.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:

- Maintain biodiversity within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
5 Cattle	3/1 -2/28	100%	Custodial	68

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(22) JIGGS FLAT #09787
Public acres – 720
AUMs – 47
Public land – 100%
Livestock No. – 4 cattle
Season of Use – 3/1-2/28
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain vegetation in current seral stage. Manage to increase litter and reduce annual invasives and spread of whitetop.

Meeting Riparian Health Standard:
- Yes.

Riparian Objectives:
- Maintain or improve riparian area health on Cottonwood Creek to Proper Functioning Condition or above.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Maintain Cottonwood Creek in proper functioning condition.

Meeting Biodiversity Standard:
- No, due to the presence of whitetop, Canada thistle, spotted knapweed and diffuse knapweed.

Biodiversity Objectives:
- Reduce existing population and control spread of noxious weeds.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Type use would be modified from Active to Custodial. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
4 Cattle	3/1 -2/28	100%	Custodial	47

Range Improvements: Whitetop, Canada thistle, diffuse and spotted knapweed were inventoried within this allotment. The BLM would develop and implement a weed control cooperative agreement with the permittee. Weed control efforts would emphasize prevention of spread and containment of existing weed populations.

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(23) JONES CONE #20005
Public acres- 420
AUMs – 65
Public land – 100%
Livestock No. – 5 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain current composition of bluebunch wheatgrass, and other cool season grasses with Wyoming big sagebrush and skunkbrush sumac.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain bunchgrass and shrub components.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The scheduled use would be as follows:

Livestock # and kind	Season	Public land	Type use	AUM
5 Cattle	3/1 -2/28	100%	Custodial	65

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(24) JUDITH RIVER #20051
Public acres – 1417
AUMs – 205
Public land – 100%
Livestock No. – 31 cattle
Season of Use – 5/1-11/15
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain current shrub and bunchgrass component in breaks. Reduce amounts of annual invasives on upland bench along the Judith River.

Meeting Riparian Health Standard:
- No, 1.8 miles on the Judith River were rated as non-functional. 1.3 miles were Functioning-At-Risk.

Riparian Objectives:
- Improve 3.1 miles on the Judith River to Proper Functioning Condition or above.
- Support cottonwood/willow establishment and recruitment

Meeting Water Quality Standard:
- No, the Judith River from Big Spring Creek to the mouth of the Missouri River is listed as water quality impaired by Montana Department of Environmental Quality (MDEQ).

Water Quality Objectives:
- Address water quality concerns by improving the reach of Judith River within the allotment to Proper Functioning Condition.

Meeting Biodiversity Standard:
- No, due to degraded riparian conditions, presence of cheatgrass on upland benches adjacent to the Judith River and abundance of noxious weeds.

Biodiversity Objectives:
- Improve riparian areas along the Judith River to Proper Functioning Condition.
- Reduce cheatgrass on benches above the river.
- Reduce existing population and control spread of noxious weeds.

Conforms with Guidelines for Livestock Grazing Management:
-No, does not conform with Guidelines #2, #5, and #10 (Appendix C). Compliance with guidelines would be addressed by implementing the proposed action.

Proposed Action: The proposed action is to reconstruct a cross fence beginning in the SW1/4SW1/4 of Section 17 (T20N, R17E) and extending northeast approximately .5 miles to a river crossing. The cross fence would terminate at an existing game enclosure in the SW1/4NW1/4. 650’ of

fence line would need to be entirely reconstructed. Reconstruction would be mainly on the river crossing and terminal point. Only routine maintenance would be required on the existing portions. The fence would allow implementation of a two-pasture deferred rotation grazing system. BLM would provide fence materials. Cooperators would provide construction and maintenance. Flexibility would be allowed on the river crossing, but route location would be specified by cooperative agreement. Type use would be modified from Custodial to Active. Permitted use would be offered as follows:

Livestock # and kind	Season	Public land	Type use	AUM
37 Cattle	6/1-11/15	100	Active	204

Total permitted use would remain 205 AUM's.

Terms and conditions of the permit would be added:

In even years, grazing use will be authorized as follows:

South Pasture	6/1 to 7/15
North Pasture	7/16 to 11/15

In odd years, grazing use will be authorized as follows:

South Pasture	10/16 to 11/15
North Pasture	6/1 to 10/15

Range Improvements: A three-wire cross fence would be reconstructed beginning in the SW1/4SW1/4 of Section 17 and extending northeast approximately .5 miles to a river crossing. The cross fence would terminate at an existing game enclosure in the SW1/4NW1/4. 650' of fence line would need to be entirely reconstructed. This reach includes mainly the river crossing and terminal point. Only routine maintenance would be required on the existing portions. See Diagram 2.1.

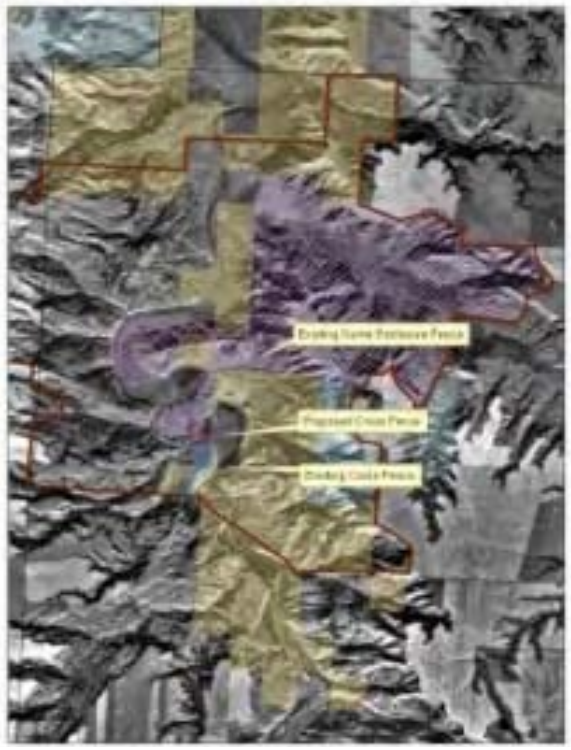

Diagram 2.1 (T. 20 N., R.17 E.)
Proposed Judith River Cross-Fence

Weeds
Canada thistle, leafy spurge, and spotted knapweed were inventoried in the riparian area of this allotment. The BLM would develop and implement a weed control cooperative agreement with the permittee. Weed control efforts would emphasize prevention of spread into the uplands and containment and control of existing weed populations within the riparian zone.

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(25) KATZMAN #20022
Public acres – 120
AUMs – 10
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain existing bluebunch wheatgrass, green needlegrass and western wheatgrass community.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	10

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(26) KELLY BOTTOM #04835
Public acres – 240
AUMs – 36
Public land – 100%
Livestock No. – 3 cattle
Season of Use – 3/1-2/28
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upland bunchgrasses and shrub community in current seral stage to reduce presence of Japanese brome.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. Type use would be modified from Active to Custodial. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
3 Cattle	3/1 -2/28	100%	Custodial	36

---

(27) KENDLE PLACE #09676
Public acres – 40
AUMs – 3
Public land – 100%
Season of use – 5-15-10-20
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upland vegetation in late seral stage.

Meeting Riparian Health Standard:
- No, .28 miles of Lacey Creek were rated Functioning-At-Risk with an upward trend.

Riparian Objectives:

- Improve riparian area health on Lacey Creek to Proper Functioning Condition or above.
- Continue to support regeneration of aspen, rocky mountain maple, and other desirable shrubs.

Meeting Water Quality Standard:

- Yes.

Water Quality Objectives:

- Maintain stream channel function and condition of streamside vegetation.

Meeting Biodiversity Standard:

- Yes.

Biodiversity Objectives:

- Maintain available browse along Lacey Creek.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	5/15 -10/20	100%	Custodial	3

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:

- N/A

Meeting Biodiversity Standard:

- No, due to crested wheatgrass.

Biodiversity Objectives:

- Manage crested wheatgrass to optimize native species.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #12 and #13. Failure to adhere with these guidelines is due to historical planting of crested wheatgrass and is not related to current grazing management practices.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
8 Cattle	3/1 -2/28	100%	Custodial	96

(28) KINKELAAR #20044

Public acres – 400
AUMs – 96
Public land – 100%
Livestock No. – 8 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:

- No, due to the presence of crested wheatgrass.

Upland Objectives:

- Manage crested wheatgrass to optimize native vegetation.

(29) LANDER CROSSING #09852

Public acres – 160
AUMs – 23
Public land – 100%
Livestock No. – 2 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:

- Yes.

Upland Objectives:

- Maintain desirable bunchgrass community and upward trend of site.

Meeting Riparian Health Standard:
- Yes.

Riparian Objectives:
- Maintain or improve riparian area health on Highwood Creek to Proper Functioning Condition or above.
- Continue to support regeneration of willow species.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Maintain Proper Functioning Condition on Highwood Creek.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use as follows:

Livestock # and kind	Season	Public land	Type use	AUM
2 Cattle	3/1 -2/28	100%	Custodial	23

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(30) LEACH PLACE #09759
Public acres – 538
AUMs – 39
Public land – 100%
Livestock No. – 5 cattle
Season of Use – 4/1-12/01
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- No.

Biodiversity Objectives:
- Maintain current levels of decreaser bunchgrasses.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
5 Cattle	4/1 -12/01	100%	Custodial	39

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(31) LEPLEYS CREEK #09782
Public acres – 514
AUMs – 49
Public land – 100%
Livestock No. – 4 cattle
Season of Use – 3/1-2/28
Type Use – Active

Meeting Upland Standard:
- No, due to degradation to spring area on a 40 acre tract in Section 22 Site is dominated by increasers and bare ground.

Upland Objectives:
- Limit early seral vegetative conditions to areas immediately adjacent to stockwatering facilities.
- Decrease abundance of non-native grasses in uplands.

Meeting Riparian Health Standard:
- No, .19 miles of Alder Creek including Jensen Spring site was

rated as Functioning-At-Risk with an upward trend.

Riparian Objectives:

- Improve Alder Creek to Proper Functioning Condition or above.
- Improve vegetative conditions in seep areas in and around spring.
- Restore willow communities in wet areas to potential of site.

Meeting Water Quality Standard:

- Yes.

Water Quality Objectives:

- Increase streambank stabilizer plant species on Alder Creek.

Meeting Biodiversity Standard:

- Yes.

Biodiversity Objectives:

- Maintain forage and cover within this allotment.
- Increase cover of wetland obligate species in wet sites.
- Restore willows to natural potential of area.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #1, #4, #5 and #7 (Appendix C). Compliance with guidelines would be addressed by implementing the proposed action.

Proposed Action: Permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
4 Cattle	03/01-02/28	100%	Active	48

Total permitted use would remain 49 AUMs

Range Improvements: BLM proposes construction of a spring exclosure in Section 22 (T20N, R10E). The exclosure would be approximately ¼ mile in total length constructed of standard steel and wire. Fence would be 4 strands spaced 16", 22", 30" and 42" from the ground. The bottom strand would be barbless. 2 gates would be installed. 3 post corners would be installed and posts would be spaced one rod apart. The overflow of the spring development would need to be rerouted. The new pipeline would be approximately 500' long trenched below the frostline, if required. A new overflow would be installed on the relocated tank. It would be approximately 130' long. Ground disturbance on Forest Service lands would be avoided. BLM would provide materials and construction. Permittee would assist with construction and provide maintenance. See Diagram 2.2.

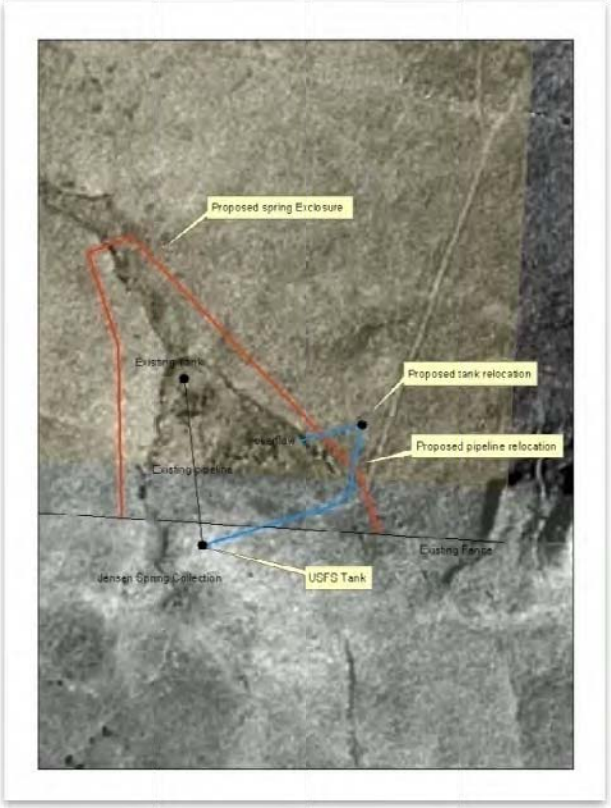

Diagram 2.2 (T.20 N., R.10 E.)
Proposed Jensen Spring Project

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(32) LINSE #20052
Public acres – 400
AUMs – 89
Public land – 100%
Livestock No. – 7 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain perennial bunchgrass and shrub community.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain cover and forage within this allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
7 Cattle	3/1 -2/28	100%	Custodial	89

There is an exchange-of-use agreement between the operators of the Linse Allotment and the Wolf Creek Common Allotment. The exchange involves 40 acres of deeded land owned by the operator of the Linse Allotment located in NE1/4SW1/4 Section 5 (T.20 N., R.16 E.). This land is fenced with the Wolf Creek Common and has been offered in exchange for 40 acres of BLM land in NE1/4NW1/4 Section 8 (T.20 N., R.16 E.) that is fenced with the Linse Allotment. The BLM land is allocated and billed to the Wolf Creek Common Allotment. The existing agreement has expired. If a new agreement is not submitted to the BLM, 11 AUM's of permitted use would be reallocated from the Wolf Creek Common Allotment to the Linse Allotment.

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(33) LOST LAKE RANCH #09725

Public acres – 121
AUMs – 11
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 5/1 – 11/1
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Continue upward trend and maintain vegetation in late seral stage to reduce presence of annual invasive species.

Meeting Riparian Health Standard:
- No, .27 miles of an unknown tributary of Lepley's Creek were rated Functioning-At-Risk with an upward trend.

Riparian Objectives:
- Increase streambank stabilizer plant species such as sedges and rushes.
- Improve unknown tributary of Lepley's Creek to Proper Functioning Condition or above.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Continue to support streambank stabilizer plant species in riparian area.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain forage and cover within allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered

as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	5/1 -11/1	100%	Custodial	11

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(34) M LAZY M #09860
Public acres – 95
AUMs – 9
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 5/1 – 11/30
Type Use – Custodial

Meeting Upland Standard:
- No, due to absence of desirable perennial bunchgrasses and associated livestock impacts.

Upland Objectives:
- Increase amount of cover and abundance of perennial bunchgrasses particularly bluebunch wheatgrass and green needlegrass.
- Increase standing residual vegetation and litter amounts.
- Reduce presence and abundance of annual invasive species such as Japanese brome, pepperweed and other mustard species.

Meeting Riparian Health Standard:
- There is no riparian habitat on public lands within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- No, due to lack of bunchgrass structure, cover, residual and litter.

Biodiversity Objective:
- Increase amounts of bunchgrasses in all age classes.
- Increase amounts of residual and litter from desirable native species.
- Reduce annual invasive species.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #1, #4, #5, #10 and #11 (Appendix C). Compliance with guidelines would be addressed by implementing the proposed action.

Proposed Action: Control of the base property associated with this allotment has changed. The new owners have submitted appropriate documentation illustrating control. The current lessee would retain the grazing lease via a valid warranty deed lease. The grazing lease would be cancelled if a base property warranty deed is not submitted. Grazing applications 4130-1, 4130-1a, and 4130-1b, were submitted to the BLM on March 14, 2008. The schedule submitted was to address compliance with standards for rangeland health. Grazing use would be permitted as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	11/1 -2/28 3/1-6/1	100%	Custodial	9

Range Improvement Projects: BLM and lessee propose an electric fence in the SW1/4 Section 1 (T19N, R12E). From the underpass beneath the St. Paul and Pacific Railroad Line, the fence would extend north approximately 1/3 of a mile near the BLM/private border and terminate at the SESESE corner of state section 36(T20N, R12E). Less than 1/8 of a mile of fence would occur on BLM.

Lessee also proposes treating 5 to 10 acres of hard pan in the southernmost portion of the pasture. The treatment would include the use of a drag to dislodge and crush prickly pear cactus pads. No ground disturbance would occur. Treatment would only target concentrations of prickly pear cactus.

The vegetation treatment would be optional. The electric fence would also be optional, but would be constructed if no significant

progress is made through permit modification. If a wood and steel fence is used in place of an electric fence, specifications regarding construction would be outlined through a cooperative agreement. See Diagram 2.3 below.

Diagram 2.3 (T19N, R12E)
Proposed M Lazy M Projects

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(35) MEES CABIN TRAIL #10085
Public acres – 1,785
AUMs – D (GR#2506091)-66
D&T(GR#2506083)-161
Public land – D (GR#2506091)-52%
D&T(GR#2506083)-67%
Livestock No. – D (GR#2506091)-42 Cattle
D&T(GR#2506083)-79 Cattle
Season of Use – 6/15-9/15
Type Use – Active
Meeting Upland Standard:

- No, the site has slight deviation from expected community composition, but was determined to be making significant progress toward achieving standard.

Upland Objectives:

- Increase perennial bunchgrass component and maintain big sagebrush and rubber rabbitbrush.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:

- N/A

Meeting Biodiversity Standard:

- No. Due to lack of bunchgrasses and residual vegetation. There are also noxious weeds present.

Biodiversity Objectives:

- Continue progress toward achieving standard. Increase bunchgrasses and maintain shrub community.

Conforms with Guidelines for Livestock Grazing Management: Yes.

<u>Proposed Action:</u> Percent public land for each permit (GR#2506091 and GR#2506083) would be changed to 62% which would accurately reflect the actual percent public land within the allotment. Grazing use would be permitted as follows:

D (GR# 2506091)

Livestock # and kind	Season	Public land	Type use	AUM
35 Cattle	6/15 -9/15	62%	Active	66

Total permitted use would remain 66 AUM''s

D&T (GR# 2506083)

Livestock # and kind	Season	Public land	Type use	AUM
85 Cattle	6/15 -9/15	62%	Active	161

Total permitted use would remain 161 AUM''s

There is an expired exchange-of-use agreement between the operators of the Mees Cabin Trail #10085 and Mattuschek #20045. The agreement exchanges 155 acres/32 AUM's of deeded lands owned by the operators of the Mattuschek Allotment

located in E1/2NW1/4, W1/2NE1/4-south of the fence, Section 33 (T.23 N., R.19 E.). This parcel is fenced inside the Mees Cabin Trail Allotment. Grazing use for this land is exchanged for 160 acres/32 AUM's of public domain lands that are allocated to Mees Cabin Trail, but are fenced inside the Mattuschek Allotment. The proposed action would allow for renewal of the agreement; however BLM has not billed for 195 acres/14 AUMs in Sections 29, 32 and 33 (T.23 N., R.19 E.) To account for grazing use of this area, BLM would reallocate 195 AUM's/14 AUM's to the Mattuschek Allotment. The term of the exchange-of-use agreement would not exceed the term of the grazing permit. The agreement would be subject to cancellation prior to expiration if conditions no longer conform to provisions outlined in 4130.6-1. If a renewed agreement is not submitted to BLM, the remaining 32 AUM's would be reallocated from the Mees Cabin Trail to the Mattuschek Allotment.

Range Improvements: Canada thistle was inventoried on a reservoir site within the allotment. The BLM and permittee would develop and implement a weed control cooperative agreement. Weed control efforts would emphasize prevention of spread into the uplands and containment and control of existing weed populations near the reservoir.

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(36) MENDEL #20057
Public acres – 320
AUMs – 97
Public land – 100%
Livestock No. – 12 cattle
Season of Use – 4/1-11/30
Type Use – Custodial

Meeting Upland Standard

- No, due to clubmoss and absence of bunchgrasses related to historical livestock grazing.

Upland Objectives:
- Increase bluebunch wheatgrass and residual vegetation/litter
- Reduce clubmoss coverage.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- No, due to clubmoss and lack of bunchgrasses. Crested wheatgrass is also present on the allotment.

Biodiversity Objectives:
- Improve residual sage grouse nesting cover in the spring.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guideline #11 (Appendix C). Compliance with the guideline would be addressed by implementing the proposed action.

Proposed Action: To maintain nesting cover and mitigate potential impacts to sage grouse, the current permitted use would be modified as follows:

Livestock # and kind	Season	Public land	Type use	AUM
13 Cattle	5/15-12/28	100%	Custodial	97

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(37) MERRILL CREEK #09828
Public acres – 320
AUMs – 36
Public land – 100%
Livestock No. - 7 cattle
Season of Use – 6/1-10/31

Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Improve vegetation to from mid-seral to late-seral stage by increasing abundance of rough fescue and reducing amounts of cheatgrass.

Meeting Riparian Health Standard:
- There is no riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain forage quality on winter ranges within this allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
7 Cattle	6/1 -10/31	100%	Custodial	36

- Increase bunchgrass component.

Meeting Riparian Health Standard:
- Yes. There is a small strip of riparian created from a stocktank overflow.

Riparian Objectives:
- Maintain sedges and rushes associated with spring overflow.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Maintain sedges and rushes associated with spring overflow.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain winter habitat for elk, deer and mountain goats.
- Maintain mountain goat migration corridor between Square Butte, Round Butte and the Highwoods.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
10 Cattle	5/1 -10/31	100%	Active	60

Total permitted use would remain 59 AUM's

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(38) MERRIMAC #09776
Public acres – 400
AUMs – 59
Public land – 100%
Livestock No. – 10 cattle
Season of Use – 5/1-10/31
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:

(39) MILWAUKEE #09677
Public acres – 120
AUMs – 46
Public land – 100%
Livestock No. – 4 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:

- No, due to dominance of crested wheatgrass.

Upland Objectives:

- Manage crested wheatgrass to optimize native vegetation and promote riparian health.

Meeting Riparian Health Standard:

- No, .75 miles of Dog Creek were rated as Non-Functional.

Riparian Objectives:

- Increase native sedge and rush species along Dog Creek.
- Improve riparian area health on Dog Creek to Proper Functioning Condition or above.

Meeting Water Quality Standard:

- Yes, Montana Department of Environmental Quality has listed Dog Creek in category 3 which means that there is insufficient data to assess any use.

Water Quality Objectives:

- Increase streamside vegetation to trap and filter sediment and promote streambank stability.

Meeting Biodiversity Standard:

- No, due to presence of crested wheatgrass in the uplands and lack of desirable riparian vegetation and channel instability.

Biodiversity Objectives:

- Manage crested wheatgrass to optimize native vegetation and riparian health.
- Increase bunchgrasses and sagebrush.
- Improve riparian health to Proper Functioning Condition.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #2, #5, #10, #11, #12 and #13 (Appendix C). Compliance with guideline #2, #5, #10 and #11 would be addressed by implementing the proposed action. Failure to conform with guideline #12 is not related to current grazing management practices. Failure to adhere with #13 is due to historical planting of crested wheatgrass.

Proposed Action: The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
4 Cattle	03/01-02/28	100	Custodial	46

An additional term and condition would be added to describe pasture use:

- *West Pasture will be managed to facilitate use of crested wheatgrass. Use will occur prior to July 1.*
- *East Riparian Pasture will be managed in conjunction with deeded croplands. Use will occur after August 15.*

Range Improvement Projects: BLM and permittee propose range projects that would alter the season of use in the riparian area. The permittee would relocate an existing electric boundary fence to the west side of Dog Creek. This would remove the riparian area from early season use when banks are at increased likelihood of damage from hoof action and trailing. The western side of the fence would concentrate management of crested wheatgrass without degrading riparian habitats. Separation of Dog Creek from the crested wheatgrass pasture would leave the western portion of the allotment without a water source. To address this, a pipeline extension would be constructed from an existing tank on private lands located in the SE1/4SW1/4 Section 8 (T20N, R19E). The pipeline would extend northwest 900 feet terminating at a hydrant/stocktank located on BLM lands in the SW1/4SW1/4 of Section 8. The pipeline would be trenched to a depth of 6 feet. The pipeline would be built to BLM

specifications. The fence would begin near the SW1/4 corner of Section 8. It would parallel Dog Creek for .5 miles terminating at the existing fenceline in the NE1/4SW1/4 of Section 8. See Diagram 2.4.

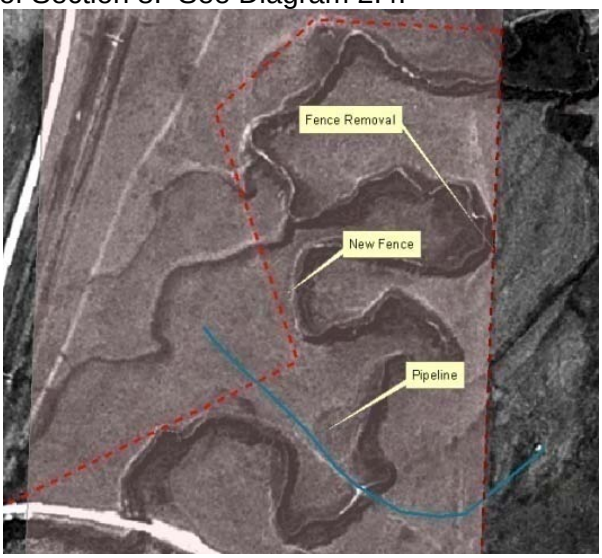

Diagram 2.4 (T20N, R19E)
Proposed Milwaukee #09677 Range Improvements

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(40) NORMAN #20063
Public acres – 696
AUMs – 138
Public land – 100%
Livestock No. – 14 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain bluebunch wheatgrass and green needlegrass community.

Meeting Riparian Health Standard:
- No, .3 miles of the Judith River was rated as Functioning-At-Risk with a static trend.

Riparian Objectives:
- Improve riparian condition on Judith River to Proper Functioning Condition or above.
- Reduce streambank alteration and bare ground cause by livestock.
- Prevent expansion, control and reduce population of spotted knapweed in the riparian area.

Meeting Water Quality Standard:
- No, the Judith River from Big Spring Creek to the mouth of the Missouri River is listed as water quality impaired by Montana Department of Environmental Quality (MDEQ).

Water Quality Objectives:
- Improve riparian condition on Judith River to Proper Functioning Condition or above.
- Increase streamside vegetation to trap and filter sediment and promote streambank stability.

Meeting Biodiversity Standard:
- No, due to riparian condition including presence of noxious weeds.

Biodiversity Objectives:
- Maintain upland health.
- Improve riparian health by reducing livestock concentration along the Judith River.
- Reduce abundance of Canada thistle and spotted knapweed and control spread to other areas.

Conforms with Guidelines for Livestock Grazing Management:
-No, does not conform with Guidelines #2, #5, and #10 (Appendix C). Compliance with guidelines would be addressed by implementing the proposed action.

<u>Proposed Action:</u> The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
14 Cattle	3/1-2/28	100%	Custodial	138

The following term and condition would be added to the permit:

BLM lands located within the Norman Allotment will be managed in a rest-rotation grazing system in conjunction with adjacent deeded lands.

Range Improvements: Operators of the Norman Allotment have been working in cooperation with the Natural Resource Conservation Service to implement a variety of range improvement projects necessary to facilitate the proposed rest-rotation grazing system. Projects include cross-fencing and stockwater pipeline extensions. The majority of these projects would occur on deeded lands. A total of 5,945 feet of pipeline and 1,591 feet of cross fence would be located on BLM lands. The impacts of these projects on public lands have been analyzed in a previous environmental assessment (MT-060-2007-70).

Canada thistle was inventoried on a reservoir site within the allotment. The BLM and permittee would develop and implement a weed control cooperative agreement. Weed control efforts would emphasize prevention of spread into the uplands and containment and control of existing weed populations near the reservoir.

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(41) NORMAN PLACE #09788
Public acres – 66
AUMs – 17
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain bunchgrass and shrub community and continue upward trend.

Meeting Riparian Health Standard:
- Yes.

Riparian Objectives:
- Maintain or improve riparian area health on the Judith River to Proper Functioning Condition or above.
- Continue to support regeneration of sandbar willow, buffaloberry, three-square bulrush, prairie cordgrass and other desirable riparian species.

Meeting Water Quality Standard:
- No, The Judith River from Big Spring Creek to the mouth of the Missouri River is listed as water quality impaired by Montana Department of Environmental Quality (MDEQ).

Water Quality Objectives:
- Maintain vegetative cover of upland and riparian areas.
- Maintain .5 mile reach of Judith River in Proper Functioning Condition.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain healthy stands of sagebrush and native bunchgrasses.
- Maintain healthy riparian habitat and preferred woody species along the river.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	17

(42) OLSEN #05099
Public acres – 540
AUMs – 91
Public land – 100%
Livestock No. – 8 cattle
Season of Use – 6/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- No, due to crested wheatgrass.

Upland Objectives:
- Manage crested wheatgrass to optimize native vegetation.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- No, due to crested wheatgrass.

Biodiversity Objectives:
- Manage crested wheatgrass to defer use on native rangelands or manage to increase abundance and diversity of native species within this stand.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #12 and #13. Failure to conform with guideline #12 is not related to current grazing management practices. Failure to adhere with #13 is due to historical planting of crested wheatgrass.

Proposed Action: The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
8 Cattle	6/1 to 2/28	100	Custodial	91

(43) OLSON #20087
Public acres – 602
AUMs – 84
Public land – 100%
Livestock No. – 7 cattle
Season of Use – 3/1-2/28
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain bluebunch wheatgrass component with Wyoming big sagebrush cover.
- Maintain late seral stage plant community with adequate litter and residual to prevent spread of Japanese brome.

Meeting Riparian Health Standard:
- No, .6 miles of Dog Creek were in Proper Functioning Condition while 1.1 miles were rated Functional-At-Risk based on presence of Canada thistle. The allotment was determined to be making significant progress toward achieving this standard based on abundance of desirable riparian vegetation and little to no bank alteration.

Riparian Objectives:
- Maintain healthy community of prairie chord grass and three square bulrush.
- Maintain and improve riparian area health on Dog Creek to Proper Functioning Condition or above.

Meeting Water Quality Standard:
- No, Dog Creek from Cutbank Creek to the mouth of the Missouri River is listed as water quality impaired by Montana Department of Environmental Quality.

Water Quality Objectives:
- Continue to support streambank vegetative cover of prairie cord grass and three-square bulrush.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain vigor of bunchgrasses and health Wyoming big sage stands.
- Maintain reaches of Dog Creek already in Proper Functioning Condition.
- Improve remaining reaches of Dog Creek to Proper Functioning Condition by reducing presence of Canada thistle and preventing expansion into other areas.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current permitted use would be modified as follows:

Livestock # and kind	Season	Public land	Type use	AUM
7 Cattle	3/1 -2/28	100%	Custodial	84

Range Improvements: Canada thistle was inventoried in the riparian area of this allotment. The BLM would develop and implement a weed control cooperative agreement with the permittee. Weed control efforts would emphasize prevention of spread and control of existing weed population within the riparian zone.

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(44) POSTHILL CREEK #09754
Public acres – 28
AUMs – 4
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 6/16-10/15
Type Use – Active

Meeting Upland Standard:
- No, due to the presence of invasive and increaser species. However, the allotment was determined to be making significant progress toward achieving this standard based on amounts of residual litter and abundance of decreaser species.

Upland Objectives:
- Maintain bluebunch wheatgrass and needlegrass species.
- Maintain litter and residual vegetation comprised of desirable species to reduce presence and expansion of Japanese brome.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain quality of big game winter range by providing arrowleaf balsamroot and other valuable winter forage.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The type use would be modified from Active to Custodial. Current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	6/16-10/15	100%	Custodial	4

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(45) POWNAL #09753
Public acres – 1929
AUMs – 115
Public land – 100%
Livestock No. – 10 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:

- No, due to lack of perennial bunchgrasses and over-abundance of annual grasses and forbs.

Upland Objectives:

- Improve vegetative community to late seral stage by reducing presence of annual invasives and increasing western wheatgrass and needlegrass species.

Meeting Riparian Health Standard:

- No, .6 miles of Little Battle Creek were rated Functioning-At-Risk. Riparian reaches accessible to livestock have excessive trailing and inadequate cover comprised of undesirable riparian species such as quackgrass and western wheatgrass.

Riparian Objectives:

- Improve reaches of Little Battle Creek that are accessible to livestock to Proper Functioning Condition or above.
- Increase desirable vegetative cover on areas of trailing and bare ground.
- Increase cover and abundance of three square bulrush, prairie cordgrass and woody species in available habitat.
- Reduce presence and abundance of annual invasive species.

Meeting Water Quality Standard:

- Yes.

Water Quality Objectives:

- Increase streamside vegetation to trap and filter sediment and promote streambank stability.

Meeting Biodiversity Standard:

- No, due to inadequate herbaceous cover.

Biodiversity Objectives:

- Increase abundance and cover of perennial bunchgrass species in the uplands.
- Improve wildlife forage and woody establishment in the riparian areas.
- Reduce presence of noxious weeds and annual invasive species throughout the allotment.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #1, #2, #5, #9, #10 and #11 (Appendix C). Compliance with guidelines would be addressed by implementing the proposed action.

Proposed Action: The current permitted use would be modified as follows:

Pasture A and B

Livestock # and kind	Season	Public land	Type use	AUM
16 Cattle	11/1 to 2/28 3/1 to 5/24	100	Active	63 45

Square Butte Pasture

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 to 2/28	100	Custodial	7

Total permitted use for the allotment would remain 115 AUM's.

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(46) ROSE CREEK #20100

Public acres – 560
AUMs – 174
Public land – 100%
Livestock No. – 22 cattle
Season of Use – 4/1-11/30
Type Use – Active

Meeting Upland Standard:

- No, due to crested wheatgrass and clubmoss presence not related to current management.

Upland Objectives:

- Increase and continue reestablishment of native species within crested wheatgrass stand.

Meeting Riparian Health Standard:

- No, .75 miles of Rose Creek were rated as Non-Functional due to

channel incisement. The reach was determined to be making significant progress toward achieving this standard based on the health and abundance of sedges and other desirable wetland obligates along Rose Creek.

Riparian Objectives:
- Maintain desirable, deep-rooted species along Rose Creek.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Maintain streamside vegetation to trap and filter sediment and promote streambank stability.

Meeting Biodiversity Standard:
- No, due to extensive crested wheatgrass and clubmoss.

Biodiversity Objectives:
- Increase decreaser bunchgrasses, Wyoming big sagebrush and overall nesting cover.
- Prevent expansion of Canada thistle.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #11, #12, and #13 (Appendix C). Failure to conform with guideline #11 and #12 are not related to current grazing management practices. Failure to adhere with #13 is due to historical planting of crested wheatgrass.

Proposed Action: The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
22 Cattle	4/1 -11/30	100%	Active	176

Total permitted use would remain 174 AUM's.

(47) SALT CREEK #20047

Public acres – 40
AUMs – 8
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain native vegetation in current late seral stage.

Meeting Riparian Health Standard:
- There is no riparian habitat on public lands within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain forage and cover for big game and Merriam's turkey.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	8

The base property associated with the Salt Creek Allotment has changed ownership. The new owner would submit the appropriate transfer fee, documentation of control of base property and grazing application forms 4130-1, 4130-1a, and 4130-1b. The proposed action includes transferring the permitted use to the new owners provided grazing applications are

consistent with all mandatory and other terms and conditions analyzed in this document.

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(48) SHAW CREEK #19835
Public acres – 40
AUMs – 6
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 4/1-11/30
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain vegetation in late seral stage.
- Maintain upland range health.

Meeting Riparian Health Standard:
- There is not riparian habitat on public lands within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	4/1 -11/30	100%	Custodial	6

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(49) SMITH-BOLSTAD COMMON #20013
Public acres – 680
AUMs – DS (GR#2506074)-36
CEB (GR#2506012)-41
NAE (2506026)-40
Public land –
DS (GR#2506074)-42%
CEB (GR#2506012)-100%
NAE (2506026)-100%
Livestock No. –
DS (GR#2506074)-21 cattle
CB (GR#2506012)-20 cattle
NAE (2506026)-20 yrlng/cattle

Season of Use –
DS (GR#2506074)- 5/16-9/15
CEB (GR#2506012)- 7/1-8/31
NAE (2506026)- 6/16-8/15
Type Use –
DS (GR#2506074) Active
CEB (GR#2506012) Active
NAE (2506026)-Exchange

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain bunchgrasses and other decreaser species on the site.
- Maintain production, litter and residual vegetation.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain biodiversity within the allotment.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Percent public land for CEB (GR#2506012) would be changed from 100% to 42% to accurately reflect the actual percent public land within the allotment. This would allow livestock number to be increased to represent the amount of livestock that utilize the #2506012 portion of the allotment. Seasons and numbers would be adjusted accordingly. Grazing use would be permitted as follows:

DS (GR#2506074)

Livestock # and kind	Season	Public land	Type use	AUM
21 Cattle	5/14 -9/16	43%	Active	36

Total permitted use would remain 36 AUM's.

CEB (GR#2506012)

Livestock # and kind	Season	Public land	Type use	AUM
46 Cattle	7/1 -8/31	42%	Active	40

Total permitted use would remain 41 AUM's

NAE (#2506026)

Livestock # and kind	Season	Public land	Type use	AUM
20 Cattle	6/16 -8/15	100%	Exchange	41*

**41 AUM's are would be authorized in the Smith-Bolstad Common. AUM's occur on deeded lands, no fees are to be charged for this use.*

Total federal preference would remain 76 AUM's.

There are two exchange of use agreements within the Smith-Bolstad Common:

#1: 90 acres/23 AUM's of deeded lands owned by the operators of the Anderson Coulee Allotment are located in section 28 (T.21 N., R.17 E.). These lands are offered in exchange for 218 acres/23 AUM's of BLM lands located in Section 21 (T.21 N., R.17 E.). BLM lands are fenced with the Anderson Coulee Allotment but are allocated to the Smith-Bolstad Common. The current agreement expires February 28, 2009. If the exchange-of-use agreement is not renewed, 23 AUM's of federal permitted use in the Smith-Bolstad Common would be reallocated to the Anderson Coulee Allotment.

#2: The operators of GR#2506026 own approximately 242 acres/41 AUM's located within the Smith-Bolstad Common including portions of Section 23 and 26 (T.21 N., R.17 E.). These lands are offered in exchange for use of an equal amount of forage (41 AUM's) within the common. The exchange-of-use agreement expired August 15, 1977. If the agreement is not renewed, the grazing authorization for GR#2506026 would be cancelled.

The term of the agreements would not exceed the term of the grazing permits. The agreements would be subject to cancellation prior to expiration if conditions no longer conform to provisions outlined in 4130.6-1.

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(50) SUFFOLK NORTH #20080
Public acres – 160
AUMs – 48
Public land – 100%
Livestock No. – 4 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- No, due to an abundance of crested wheatgrass.

Upland Objectives:
- Manage to increase abundance and diversity of native species within this stand.

Meeting Riparian Health Standard:
- There is no riparian habitat on public lands within this allotment.

Meeting Water Quality Standard:
- N/A.

Meeting Biodiversity Standard:
- No, due to the high occurrence of crested wheatgrass.

Biodiversity Objectives:
- Maintain health and abundance of sagebrush and other native species within the crested wheatgrass stand.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #12 and #13. Failure to conform with guideline #12 is not related to current grazing management practices. Failure to adhere with #13 is due to historical planting of crested wheatgrass.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
4 Cattle	3/1 -2/28	100%	Custodial	48

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(51) SURPRISE CK BADLANDS #19691
Public acres – 670
AUMs – 39
Public land – 100%
Livestock No. – 9 cattle
Season of Use – 6/1-9/30
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend and retain vegetative community in late seral stage.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain health and abundance of decreaser bunchgrasses.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, the current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
9 Cattle	6/1 -9/30	100%	Active	36

Total permitted use would remain 39 AUM's.

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(52) T J #09670
Public acres – 120
AUMs – 37
Public land – 100%
Livestock No. – 3 cattle
Season of Use – 3/1-12/31
Type Use – Custodial

Meeting Upland Standard:
- No, due to lack of bunchgrasses and excessive bare ground caused by livestock.

Upland Objectives:
- Increase abundance and cover of green needlegrass and other bunchgrass decreaser species.
- Increase residual vegetation and litter to reduce bare ground.

Meeting Riparian Health Standard:
- There is no riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- No, due to the plant community composition and residual vegetation and litter.

Biodiversity Objectives:

- Increase health and abundance of decreaser bunchgrass species.
- Increase residual forage and litter amounts.

Conforms with Guidelines for Livestock Grazing Management:

-No, does not conform with Guidelines #1, #4 and #5. Failure to conform to these guidelines would be addressed by implementing the proposed action.

Proposed Action: The current permitted use would be modified as follows:

Livestock # and kind	Season	Public land	Type use	AUM
14 Cattle	6/14 -9/1	100%	Active	36

Total permitted use would remain 37 AUM's.

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(53) UPPER COFFEE CREEK #09746

Public acres – 165
AUMs – 31
Public land – 100%
Livestock No. – 4 cattle
Season of Use – 4/1-11/30
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain good vegetative cover and upward trend.

Meeting Riparian Health Standard:
- N/A

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain health and abundance of decreaser bunchgrasses.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
4 Cattle	4/1 -11/30	100%	Active	32

Total permitted use would remain 31 AUM's.

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(54) UPPER COWBOY CREEK #09827

Public acres – 120
AUMs – 7
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain vegetation at potential natural community.

Meeting Riparian Health Standard:
- Yes.

Riparian Objectives:
- Maintain regeneration of rocky mountain maple and cottonwood to natural extent.
- Limit spread and abundance of Canada thistle and houndstongue.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Maintain vegetative condition of upland and riparian areas.
- Maintain .21 miles of Little Battle Creek in Proper Functioning Condition.

Meeting Biodiversity Standard:
- No, due to encroachment of lodgepole pine and horizontal juniper.

Biodiversity Objectives:

- Manage to reduce conifer encroachment.
- Increase herbaceous growth on the site.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	7

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(55) UPPER SHONKIN #09749
Public acres – 160
AUMs – 16
Public land – 100%
Livestock No. – 3 cattle
Season of Use – 5/15-10/20
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upland health.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Water Quality Objectives:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain cover for wildlife.
- Maintain desirable herbaceous understory.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: The type use would be modified from Active to Custodial. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
3 Cattle	5/15 -10/20	100%	Custodial	16

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(56) UPPER WILSON COULEE #09706
Public acres – 41
AUMs – 10
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend.
- Maintain ecological status in late-seral stage.

Meeting Riparian Health Standard:
- There is no riparian habitat on public lands within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain nesting cover.
- Maintain native perennial bunchgrasses.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	10

(57) WALLING #20089
Public acres – 1028
AUMs – 119
Public land – 100%
Livestock No. – 10 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend.
- Maintain ecological site at near potential natural community.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain health and abundance of perennial bunchgrasses.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
10 Cattle	3/1 -2/28	100%	Custodial	119

(58) WALTERS #20088
Public acres – 400
AUMs – 78
Public land – 100%
Livestock No. – 7 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- No, due to clubmoss and lack of decreaser species. These factors were determined not caused by current livestock management.

Upland Objectives:
- Increase abundance and cover of bluebunch wheatgrass and other native decreaser species.

Meeting Riparian Health Standard:
- No, 2.15 miles on Taffy Creek were rated as Functioning-At-Risk with an upward trend. On Cutbank Creek, 1 mile was rated Non-functional due to a natural landslide.

Riparian Objectives:
- Continue improving trend on Taffy and Cutbank Creeks by increasing cover and abundance of prairie chordgrass, three-square bulrush, prairie bulrush, spikesedge and other desirable wetland species.
- Improve riparian area health on Taffy Creek and Cutbank Creek to Proper Functioning Condition or above.

Meeting Water Quality Standard:
- Yes.

Water Quality Objectives:
- Increase streamside vegetation to trap and filter sediment and promote streambank stability.
- Improve vegetative condition of upland and riparian areas.

Meeting Biodiversity Standard:
- No, due to clubmoss.

Biodiversity Objectives:
- Increase forage production by reducing clubmoss coverage.

- Increase perennial bunchgrasses.
- Maintain health and abundance of Wyoming big sagebrush.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
7 Cattle	3/1 -2/28	100%	Custodial	78

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(59) WARNEKE #20017
Public acres – 760
AUMs – 132
Public land – 100%
Livestock No. – 11 cattle
Season of Use – 3/1-2/28
Type Use – Active

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain health and abundance of bunchgrass community.
- Maintain residual vegetation and litter amounts.
- Prevent spread of noxious weeds from river into uplands.

Meeting Riparian Health Standard:
- No, 2.45 of 4 miles of riparian along the Judith River were rated as Functioning-At-Risk with a static trend. Livestock and noxious weeds were determined to be controlling factors.

Riparian Objectives:
- Maintain or improve the 1.55 miles of riparian in Proper Functioning Condition to Proper Functioning Condition or above.
- Improve remaining 2.45 miles to Proper Functioning Condition or above by reducing hot season use along the river and reducing amounts of Canada thistle and spotted knapweed.
- Continue to support preferred woody species regeneration.

Meeting Water Quality Standard:
- No, the Judith River from Big Spring Creek to the mouth of the Missouri River is listed as water quality impaired by Montana Department of Environmental Quality (MDEQ).

Water Quality Objectives:
- Increase streambank stabilizer plant species to trap and filter sediment and promote streambank stability.
- Maintain or improve all reaches of the Judith River within the allotment to Proper Functioning Condition.
- Maintain upland health.

Meeting Biodiversity Standard:
- No, due to areas of Functioning-At-Risk condition on the Judith River.

Biodiversity Objectives:
- Increase vegetative cover in streamside zones for fish and wildlife species.
- Reduce abundance of spotted knapweed and Canada thistle and prevent spread to other areas.

Conforms with Guidelines for Livestock Grazing Management:
-No, does not conform with Guidelines #2, #5 and #10 (Appendix C). Failure to conform with these guidelines would be addressed by implementing the proposed action.

Proposed Action: The permit would be modified as follows:

Livestock # and kind	Season	Public land	Type use	AUM
22 Cattle	5/1 -10/30	100%	Active	132

Terms and Conditions:

Northwest pasture will be grazed between May 1 and June 15 to avoid hot season use.

South BLM pasture will be grazed between September 1 and October 30.

Fall and Spring use of the Northwest and South BLM pastures may be alternated depending on grazing of deeded cropland.

The current grazing permit is based on a lease agreement. A renewed lease agreement would be required between the current operators and new base property owners. If a new agreement is signed with the same mandatory terms and conditions as analyzed above, a subsequent permit would be generated for the term of the lease agreement, but not to exceed the ten year term of the grazing permit.

Range Improvements: Canada thistle and spotted knapweed were inventoried in the riparian area of this allotment. The BLM would develop and implement a weed control cooperative agreement with the permittee. Weed control efforts would emphasize prevention of spread into the uplands and containment and control of existing weed populations within the riparian zone.

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(60) WELLER PLACE #10086
Public acres – 81
AUMs – 14
Public land – 100%
Livestock No. – 2 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain native plant community.
- Increase decreaser plant species such as green needlegrass.
- Increase amounts of litter on site.
- Maintain positive trend.

Meeting Riparian Health Standard:
- There is no riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Improve vigor and regeneration of Wyoming big sagebrush on the site.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
2 Cattle	3/1 -2/28	100%	Custodial	14

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(61) WEST SHONKIN CREEK #09830
Public acres – 40
AUMs – 4
Public land – 100%
Livestock No. – 1 cattle
Season of Use – 3/1-2/28
Type Use – Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain vegetation in current seral stage. The parcel is mostly forested with limited access to livestock.

Meeting Riparian Health Standard:
- There is no riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain existing hiding and thermal cover for game species and habitat for non-game closed-canopy forest species.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	4

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(62) WHERLEY #20091
Public acres – 360
AUMs – 84
Public land – 100%
Livestock No. – 17 cattle
Season of Use – 5/1-9/25
Type Use – Active

Meeting Upland Standard:
- No. Production is limited on the site to the presence of clubmoss and lack of bunchgrasses related to historical grazing use.

Upland Objectives:
- Improve production of decreaser bunchgrass species.
- Reduce coverage of clubmoss.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- No, due to clubmoss and lack of bunchgrass component.

Biodiversity Objectives:
- Improve residual cover to support sage grouse nesting.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Considering abundance of sagebrush and native grasses reestablishing on the site, the current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
17 Cattle	5/1 -9/25	100%	Active	83

Total permitted use would remain 84 AUM's.

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(63) WOLF CREEK COMMON #20016
Public acres –6,480
AUMs – 1317
V.A.:159 (EOU)
D,G,C.B.: 473
D.Bros.:462
M,M.B.: 297
Public land –
V.A.: 100%(EOU)
D,G,C.B.: 57%
D.Bros.:48%
M,M.B.: 27%
Livestock No. –
V.A. (#2506081): 53 cattle(EOU)
D,G,C.B. (#2506022): 137 cattle
D.Bros. (#2506036) : 221 cattle
M,M.B. (#2506013): 196 cattle
Season of Use –
V.A. (#2506081): 7/1 to 9/30 (EOU)
D,G,C.B. (#2506022): 5/1 to 10/31

D.Bros. (#2506036): 7/1 to 10/30
M,M.B(#2506013).: 5/1 to 10/31

Type Use –
V.A. (#2506081): Exchange-of-Use
D,G,C.B. (#2506022): Active
D.Bros. (#2506036):Active
M,M.B. (#2506013): Active

Meeting Upland Standard:
- Yes

Upland Objectives:
- Maintain desirable plant communities comprised of bluebunch wheatgrass, green needlegrass and other desirable species.

Meeting Riparian Health Standard:
- Yes.

Riparian Objectives:
- Maintain desirable, deep-rooted wetland plant communities in streamside zone.
- Maintain regeneration of plains cottonwood, sandbar and peachleaf willow.

Meeting Water Quality Standard:
- No, the Judith River from Big Spring Creek to the mouth of the Missouri River is listed as water quality impaired by Montana Department of Environmental Quality (MDEQ).

Water Quality Objectives:
- Maintain upland health.
- Maintain .55 miles of the Judith River in Proper Functioning Condition.

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain native perennial bunchgrass community in the uplands.
- Maintain sagebrush and residual nesting cover.
- Prevent spread and expansion of spotted knapweed and Canada thistle.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Due to limited availability of livestock water, the GR#2506036 portion of the allotment would be changed to provide an earlier season of use. Livestock numbers would be adjusted accordingly to accommodate the extended grazing season. Review of case files indicate that changes in private land fencing may have occurred since the last permit was issued. Percent public land may be subject to change as better information related to the amount of forage in the common pasture becomes available. The current permitted use would be modified as follows:

V.A (#2506081)

Livestock # and kind	Season	Public land	Type use	AUM
53 Cattle	7/1 -9/30	100%	EOU	157

Total allowable use would remain 159 AUMs. AUM's occur on deeded lands, no fees are assessed.

D,G,C.B. (#2506022)

Livestock # and kind	Season	Public land	Type use	AUM
137 Cattle	5/1 -10/31	57%	Active	472

Total permitted use would remain 473 AUM's

D.Bros.: (#2506036)

Livestock # and kind	Season	Public land	Type use	AUM
160 Cattle	5/1 -10/30	48%	Active	462

Total permitted use would remain 462 AUM's

M,M.B (#2506013)

Livestock # and kind	Season	Public land	Type use	AUM
196 Cattle	5/1-10/31	27%	Active	297

Total permitted use would remain 297 AUM's.

Exchange-of-Use Agreements

#1: There is an exchange-of-use between the operators of the Linse Allotment and the Wolf Creek Common Allotment. The exchange involves 40 acres of deeded land owned by the operator of the Linse Allotment located in T.20 N., R.16 E., Section 5 (NE1/4SW1/4). This land is fenced with the Wolf Creek Common and has been offered in exchange for 40 acres

of BLM land (T.20 N., R16 E.; Section 8,NE1/4NW1/4) fenced with the Linse Allotment. The BLM land is allocated and billed to the Wolf Creek Common Allotment. The existing agreement is expired. If a new agreement is not submitted and approved by BLM, 11 AUM's of permitted use would be reallocated from the Wolf Creek Common Allotment to the Linse Allotment.

#2: An exchange-of-use agreement exists between GR#2506081 and the BLM. 720 acres/159 AUM's of deeded land are fenced with the Wolf Creek Common. An equal amount of forage is exchanged for inclusion of these lands within the Wolf Creek Common Allotment. The current agreement expires January 23, 2011. If the agreement is not renewed and approved by BLM, the grazing authorization for GR#2506081 would be cancelled. A new agreement could not exceed the term of the grazing permit.

#3: An agreement to exchange lands exists in the file record dating back to 1967. A 40 acre parcel of BLM land located in the SW1/4SE1/4 of Section 34 (T.22 N., R.16 E.) is fenced with the Wolf Creek Common and allocated to the PN Sag Allotment #15123. Deeded lands located in Sections 25, 26 and 36 (T.22 N., R.15 E.), in addition to, state land and other deeded properties are involved in part of a larger land-use exchange. No exchange-of-use agreement (Form 4130-4) has ever been submitted or approved to authorize this use. An agreement would be required to continue this exchange. If no agreement is submitted and approved by BLM, 11 AUM's of permitted use associated with 40 acres of BLM would be reallocated from the PN Sag to the Wolf Creek Common Allotment.

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(64) WOODCOCK #09853
Public acres – 40
AUMs – 13
Public land – 100
Livestock No. – 1 cattle
Season of Use – 3/1-2/28
Type Use –Custodial

Meeting Upland Standard:
- Yes.

Upland Objectives:
- Maintain upward trend and current bluebunch wheatgrass community.

Meeting Riparian Health Standard:
- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:
- N/A

Meeting Biodiversity Standard:
- Yes.

Biodiversity Objectives:
- Maintain habitat for elk, deer, antelope and non-game wildlife species.

Conforms with Guidelines for Livestock Grazing Management: Yes.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue as follows:

Livestock # and kind	Season	Public land	Type use	AUM
1 Cattle	3/1 -2/28	100%	Custodial	13

Chapter 3
Affected Environment

This chapter describes the environmental resources related to the issues in Chapters 1 and 2. The resources include the physical, biological, and socio-economic conditions that could be affected by the implementation of one of the alternatives.

The information in this chapter is organized into the following headings:

3.1 Rangeland/Livestock Grazing

Rangeland vegetation consists of sagebrush grasslands, grasslands, and forestlands. Mixed shrub communities are common in coulees and benches throughout all of these vegetation types. Common grasses and grasslike species include bluebunch wheatgrass, green needlegrass, needle and thread, western wheatgrass, prairie junegrass, blue grama, prairie sandreed, Sandberg bluegrass, and threadleaf sedge. Introduced grasses are found in some areas, either in pure stands or intermingled with native species.

Crested wheatgrass and smooth brome are the most prevalent introduced perennial grasses in the watershed, with stands occurring in several allotments. Introduced annual grasses include cheatgrass and Japanese brome. Common shrubs include big sagebrush, silver sagebrush, shrubby cinquefoil, wild rose, saltbush spp., greasewood and rubber rabbitbrush. Other common vegetation includes western yarrow, wild onion, pussytoes, heartleaf arnica, cudweed sagewort, milkvetch spp., arrowleaf balsamroot, hairy goldenaster, purple prairie clover, low larkspur, black Sampson, sticky geranium, curlycup gumweed, Rocky Mountain iris, lupine, prickly pear cactus, yellow sweetclover, woolly Indian wheat, Hood's phlox, dense clubmoss, scarlet globemallow, and salsify among others.

Long-styled thistle and square-stem monkey flower are BLM Sensitive plants documented within or near the planning area. There are no populations of either of these species documented on BLM lands within the Upper Arrow Creek Watershed area; however, potential habitat does exist for both of these species.

A total of 64 grazing allotments permitted to 62 permittees/lessees are included in the watershed. The majority of permits/leases authorize cattle grazing. Total permitted use in the planning area is 6,164 AUMs.

3.2 Upland Range Health

Allotments were assessed for upland range health during the summers of 2006 and 2007. Rangeland health is defined as the degree to which the integrity of the soil,

vegetation, water and air as well as the ecological process of the rangeland system are balanced and maintained (BLM Tech. Ref. 1734-6).

Upland health was determined using representative study areas. These study areas were evaluated for ecological site index, upland range health indicators, and soil surface factors. Thirty of the 64 allotments are meeting the upland health standard. Thirty-four allotments are not meeting the upland standard; current livestock management is a significant factor on 8 of these allotments. Appendix F displays a list of study results by allotment.

Drought has influenced the condition of vegetation in some areas. To separate the impacts of drought from livestock use, the evaluation team looked at community composition in contrast to production. Other indicators such as fence line contrasts and comparisons with similar sites under different management were observed to discern the amount of impact caused by livestock management versus impacts of drought. Precipitation records were also reviewed.

Seral stages and ecological site index scores were determined on upland sites using the NRCS ecological site index technical guides for each ecological site. This method assesses the seral stage of an ecological site and provides a scoring system. The higher the score, the higher the plant successional stage (seral stage). Changes in plant communities (known as plant succession) are characterized by different types of plant communities replacing other types of plant communities. A plant community reaches climax or Potential Natural Community (PNC) when it reaches a point that the community maintains itself and is relatively stable. The amount and type of disturbance, the site, and the amount of rest following disturbance often dictate the seral stage of the plant community. In prairie grassland ecosystems, areas that have prolonged disturbance with little rest have a high abundance of annual forbs and weeds, some annual grasses, and shallow rooted perennial grasses of short stature. These conditions would indicate a low seral stage. With the NRCS ecological site index system, the higher the score, the higher the seral stage.

Areas without recent disturbance or light disturbance followed by periods of rest usually reflect late seral or potential natural community. This stage is characterized by tall, deep rooted grasses, fewer forbs and weeds, and in some cases a shrub overstory. Prairie ecosystems evolved with periodic disturbance in the form of fire, grazing, hail, and drought followed by periods of favorable growing conditions. In some cases a lack of some type of disturbance over a period of decades can cause succession to reverse toward lower or early seral conditions. Conversely, prolonged disturbance without adequate rest for plant recovery can also lead to early seral conditions. Proper livestock grazing management allows some disturbance followed by periods of rest during the growing season resulting in healthy, productive upland range sites.

On a site-specific scale, late seral or PNC conditions are associated with healthy rangelands and early (low) seral conditions are often associated with unhealthy rangelands. On a larger scale, however, a mix of seral stages provides habitat diversity. Healthy upland range sites generally maintain a high percentage of the plant community in late seral or PNC conditions, although a small percentage of the total acreage may be in early seral stages. Examples of acceptable early seral conditions would be livestock watering points, trails, prairie dog towns and areas surrounding gates and cattleguards.

Erosion condition class determinations (soil surface factors) were also completed to

assess erosion conditions on rangelands. The method uses seven factors to assess the condition of the soil surface. Factors such as the amount of bare ground, amount of rilling, gullies or other forms of erosion are assessed and scored. These criteria are indicative of the amount of erosion that is occurring. The majority of the acreage in the planning area rated in the stable or slight erosion class category.

The BLM also uses rangeland health indicators to assess and evaluate problematic upland range sites. These indicators provide no scores, and factor the structure and function of the ecosystem rather than individual components. Rangeland health indicators are an important and effective way to communicate problems or successes to permittees/ lessees and the public.

The biotic and physical indicators include:

Biotic

- plant community diversity
- plant community structure
- photosynthesis activity
- plant status
- presence of exotic plants (weeds)
- seed production
- nutrient cycling

Physical

- flow patterns
- soil movement by wind or water
- soil crusting and surface sealing
- soil compaction
- rills
- gullies
- amount of ground cover
- cover distribution

Rangeland health determinations were made based on upland health assessments comprised of the ecological site index, soil surface factors, and range health indicators. Grazing allotments were placed in one of three categories: meeting the upland health standard, not meeting the standard but livestock grazing is not a significant factor (or the allotment is making significant progress toward meeting the standard), and not meeting the standard. Significant progress is determined when an allotment with degraded conditions is showing a strong upward trend.

3.3 Riparian Health

Riparian areas are defined as the green zones associated with lakes, reservoirs, estuaries, potholes, springs, bogs, wet meadows, and streams (intermittent or perennial by Lewistown Field Office definitions). Riparian areas are characterized by water tables at or near the soil surface, and by vegetation requiring high water tables. A universally accepted definition satisfactory to all users has not yet been developed because the definition depends on the objectives and the field of interest. However, scientists generally agree that riparian areas are characterized by one or more of the following features: 1) *wetland hydrology*, the driving force creating all riparian areas, 2) *hydric soils*, an indicator of the absence of oxygen, and 3) *hydrophytic vegetation*, an indicator reflecting riparian site conditions.

Most of the riparian areas on BLM land within the planning area were assessed for health. Riparian health ratings consist of three categories; proper functioning condition (PFC), functional at risk (FAR), and nonfunctional (NF). Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to:

- dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality;

- filter sediment, capture bedload, and aid floodplain development;

- improve flood-water retention and groundwater recharge;

- develop root masses that stabilize streambanks against cutting action;

- develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and

- support greater biodiversity (USDI, 1998).

The riparian-wetland areas within this planning area are as diverse as the landscape. They range from steep gradient, mountain streams that support Rocky Mountain maple, quaking aspen, water birch, and narrowleaf cottonwood to broad, meandering, prairie streams with plains cottonwood, sandbar willow, peachleaf willow and a variety of herbaceous Scirpus, Carex, and Juncus spp. Large, lentic wetland areas are also common in the glaciated plains areas and are mainly located within closed basins. As a result of this, salt concentrations are very high, and the vegetation is comprised of saline tolerant species that can survive there such as red glasswort, inland salt grass, alkali bulrush, and nuttal alkali grass.

The health of streams within the planning area was assessed with the Montana Riparian and Wetland Association (MRWA) Lotic Wetland Health Assessment for Stream and Small Rivers and the PFC checklist (USDI, 1998). The following streams were assessed on BLM land within the planning area: Arrow Creek, Cottonwood Creek, Cutbank Creek, Davis Creek, Dog Creek, Judith River, Little Battle Creek, Ole Coulee, Rose Creek, Taffy Creek, Alder Creek, Braun Creek, Highwood Creek, Lacey Creek, and unknown tributaries to Lepleys, Little Battle, and Mansfield Creeks. Lentic wetland assessments were also completed on BLM land on Big Lake, Kingsbury Lake, and Shonkin Lake.

A total of approximately 23.51 miles of lotic wetland and 50.99 acres of lentic wetland were assessed. The acres of lentic are only the acres associated with a buffer width of the BLM land. Big Lake, Kingsbury Lake, and Shonkin Lake are significantly larger than 51 acres, but BLM is the minority land holder on these waterbodies. A total of 7.44 miles of lotic wetland were in PFC, 4.62 were FAR (upward trend), 5.95 were FAR (static), and 5.5 miles were NF. Riparian areas that were FAR or NF because of causes that are within BLM's management capabilities such as weeds or livestock grazing require corrective actions, 9.1 miles within the planning area were not in PFC because of livestock and/or weeds. On the lentic sites, 28.09 acres were PFC, and 22.9 acres were FAR (static). The lentic sites were FAR because of an abandoned railroad right-of-way that dissected the wetland.

The Judith River has the most stream miles on BLM within the planning area. BLM has approximately 11.15 miles of streambank on the Judith River. Some of these miles are within the same river reach, but individual assessments were completed for each side when the river was large enough to preclude easy crossing of livestock. Noxious weeds are a very large issue on the Judith. Spotted knapweed canopy cover and density distribution is very high. Based upon observation, channel morphology and substrate particle size distribution may depart from historic conditions. It appeared that the width to depth ratio and percent fines may be larger than what would have been found under the natural setting. This may be a result of chronic dewatering and other impacts within the watershed. Riparian area vegetative condition on the Judith within the planning area seems to be dependent upon the level and location of concentrated use by

livestock because some areas were in good condition with well vegetated streambanks and excellent woody species regeneration. However, other locations had excessive streambank erosion, considerable bare ground, and a lack of desirable riparian plant species as a result of livestock use. Approximately 5.05 miles out of the total of 11.15 miles were not meeting the riparian standard because of livestock grazing.

3.4 Noxious Weeds

Noxious weeds are a serious threat to the State of Montana and the Upper Arrow Creek Watershed planning area. Infestations of noxious weeds are present throughout the watershed, with higher concentrations along the major drainages and their tributaries, including Arrow, Dog, Taffy, Wolf Creeks and the Judith River.

Montana noxious weeds are categorized according to the following criteria:

- *Category 1* noxious weeds are weeds that are currently established and generally widespread in many counties of the state. Management criteria include awareness and education, containment, and suppression of existing infestations and prevention of new infestations. These weeds are capable of rapid spread and render land unfit or greatly limit beneficial uses.

    - Canada Thistle (*Cirsium arvense*)
    - Field Bindweed (*Convolvulus arvensis*)
    - Whitetop or Hoary Cress (*Cardaria draba*)
    - Leafy Spurge (*Euphorbia esula*)
    - Russian Knapweed (*Centaurea repens*)
    - Spotted Knapweed (*Centaurea maculosa*)
    - Diffuse Knapweed (*Centaurea diffusa)*
    - Dalmatian Toadflax (*Linaria dalmatica)*
    - St. Johnswort (*Hypericum perforatum*)
    - Sulfur (Erect) Cinquefoil (*Potentilla recta*)
    - Common tansy (*Tanacetum vulgare*)
    - Ox-eye Daisy (*Chrysanthemum leucanthemum* L
    - Houndstongue (*Cynoglossum officinale* L.)
    - Yellow toadflax (*Linaria vulgaris)*

- *Category 2* noxious weeds have recently been introduced to the state or are rapidly spreading from their current infestation sites. These weeds are capable of rapid spread, rendering lands unfit for beneficial uses. Management criteria include awareness and education, monitoring and containment of known infestations, and eradication where possible.

    - Dyers Woad (*Isatis tinctoria*)
    - Purple Loosestrife or Lythrum (*Lythrum salicaria*, *L. virgatum*, and any hybrid crosses thereof).
    - Tansy Ragwort (*Senecio jacobea* L)
    - Meadow Hawkweed Complex (*Hieracium pratense*,
    - *H. floribundum*, *H. piloselloides*)
    - Orange Hawkweed (*Hieracium aurantiacum* L.)
    - Tall Buttercup (*Ranunculus acris* L)
    - Tamarisk [Saltcedar] (*Tamarix* spp.)
    - Perennial pepperweed (*Lepidium latifolium*)

- *Category 3* noxious weeds have not been detected in the state or may be found only in small, scattered, localized infestations. Management criteria include awareness and education, early detection and immediate action to eradicate infestations. These weeds are known pests in nearby states and are capable of rapid spread and render land unfit for beneficial uses.

    - Yellow Starthistle (*Centaurea solstitialis*)
    - Common Crupina (*Crupina vulgaris)*
    - Rush Skeletonweed (*Chondrilla juncea)*
    - Eurasian watermilfoil (*Myriophyllum spicatum*) Yellow flag iris (*Iris pseudacoru)*

Several weed species have been identified within the planning area; the largest areas of infestation are occupied by:

- Canada thistle
- Spotted knapweed
- Whitetop (Hoary cress)
- Houndstongue

The BLM has been actively involved in an integrated weed control program within the planning area for several years. Weed infestations have grown appreciably during the past two decades. Spotted knapweed biological control agents have been released on a limited basis within the planning area. Effective biological control agents are currently not available for Russian knapweed, whitetop, or houndstongue.

Noxious weed species of concern which have recently been identified within the watershed are:

- Salt cedar
- Black henbane

Salt cedar is an extremely invasive noxious weed presently expanding along the Missouri River and tributaries. Dense stands of salt cedar can deplete groundwater aquifers and dewater perennial watercourses.

3.5 Coniferous Forest

Forested vegetation types include ponderosa pine and ponderosa pine/ Douglas-fir. Both vegetation types are common in the Upper Arrow Creek planning area. Ponderosa pine is common on south slopes and ridges and the ponderosa pine/Douglas fir type is common on steep north facing slopes. Forested areas are generally patchy and disconnected because of the broken topography.

Conifer densities have been increasing in many forested areas. Pine seedlings and saplings are expanding into rangeland areas on forest margins. Heavy stand densities cause competition among conifers, with associated declines in forest health and decreased productivity of understory vegetation such as grasses, forbs, and shrubs. Drought has exacerbated the condition. Understory conifers contribute to fuel loadings that create a continuous fuel bed from the ground to the canopy. Wildland fire can be severe in these areas.

The encroachment of conifers into open parks reduces biodiversity, crowds out sagebrush/grassland habitat and creates an increase threat of severe fires due to an increase in the continuity of fuels. Portions of Square Butte are of particular concern.

3.6 Wildfire Management

The majority of the planning area is located in the LFO Breaks Fire Management Unit (FMU). This FMU has been designated as Management Category C in the Fire/Fuels Management Plan Environmental Assessment/Plan Amendment for Montana and the Dakotas (July 2003). The C designation identifies areas where fire is a desired ecosystem management tool. Fire could be a positive influence in much of this area and restoration of natural fire regimes would be encouraged where practical. However, each fire occurrence would have special consideration. Obvious concerns focus around structural developments, croplands, livestock and livestock forage needs. Social and political considerations would dictate management of each fire occurrence. Appropriate fire suppression based on current fire danger, resource availability and predicted weather would be used to ensure safety of fire suppression personnel, reduce cost of fire suppression and provide an opportunity to return fire to its natural place in the ecology of the area.

There are some scattered lands in the watershed area located in the Range/ Grasslands FMU that are designated B. The B designation identifies areas where unplanned fire is likely to cause negative

effects. Emphasis in B Category areas are prevention/education and suppression.

3.7 Recreation/Visual Resource Management

Recreation opportunities within the planning area include hunting, wildlife photography, wildlife viewing, sightseeing, and some pleasure driving where public land access is available. The majority of use occurs during the summer and the fall hunting season.

Hunting opportunities and access for the general public in the planning area are generally limited due to scattered land patterns. However, there are opportunities on several blocks of land and accessible parcels. Outfitters provide deer and elk hunting trips to clientele from their ranch headquarters on a day-use basis in the planning area.

Additionally, a number of dispersed campsites along the travel routes are used by hunters. These campsites are used most weekends, and sometimes for several weeks by different parties of hunters from September through November. A fee is not required for the general public, but camping is limited to 14 days. Camps must be moved at least five miles following the 14-day limit.

Public land within the planning area has been assigned a Visual Resource Management (VRM) class based on a process that utilizes scenic quality and sensitivity to changes in the landscape based upon the distance zone from which a project or proposal would be seen by the casual observer. This is accomplished by incorporating the four primary elements found in the environment: form, line, color, and texture, into a proposed project. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The four VRM classes are numbered I to IV (Visual Resource Management Program,

Bureau of Land Management, 1980); the lower the number the more sensitive and scenic the area. Each class has a management objective that prescribes the level of acceptable change in the landscape. The majority of lands situated in relatively blocked land patterns adjacent to the Judith River and Arrow Creek are Class II VRM lands. The objective of this class is to retain the existing character of the landscape. Some scattered tracts mainly located in the upper portions of Cutbank, Rose, Dog and Taffy Creeks may contain lands designated in VRM class III and IV.
The Class III rating allows for moderate contrasts to the environment, but they should be subordinate to the existing landscape. For Class IV lands, the level of contrast to the landscape from authorized projects could be evident, but should be moderated by using the basic elements of form, line, texture, and color.

3.8 Wildlife

The variety of upland and riparian vegetation within the watershed provides habitat for a diverse wildlife population. In a relatively small area, the habitat may include deciduous tree stands with other associated riparian species, mixed coniferous forest, sagebrush steppe, grasslands and agricultural land. Over 50 mammals, 200 species of birds and 20 species of amphibians and reptiles inhabit these areas. The Judith River can be a valuable fishery in years of adequate moisture and adequate flows. Wildlife species included on the latest Threatened and Endangered (T&E) list of Montana counties for Fergus, Chouteau and Judith Basin Counties include; pallid sturgeon (Endangered) and black-footed ferret (Endangered). The pallid sturgeon is found in the Missouri River. There are no BLM parcels that have perennial streams in this watershed that are closer than five miles to

the Missouri River. The nearest documented black-footed ferrets are at the U-L Bend experimental release area on Charles M Russell National Wildlife Refuge 60 miles east of the planning area. All of the prairie dog towns that were inventoried in this planning effort are all very small and spread apart so they would not be considered sufficient habitat to sustain a population of black-footed ferrets.

3.8.1 Mammals

Table 3.1 is a list of mammal species known to occur within or near the planning area:

The black-tailed prairie dog was ruled to be warranted for listing but precluded by the U.S. Fish and Wildlife Service in February 2000. After a thorough review of the species they were removed from the candidate list in August 2004. Four prairie dog towns have been documented within the planning area. There are 3.1 acres near Shonkin Lake, 9 acres near Kingsbury Lake, and two adjacent towns of 2 and 7 acres near Flat Creek.

Because of the limited size and number of the dog towns in the planning area, there opportunity for black-footed ferret occupation is minimal. These dog towns provide limited opportunity for species such as burrowing owls, ferruginous hawks, and mountain plovers that are known to be associated with dog towns. Prairie dog towns provide an island of unique habitat that attracts a large number of predator species, particularly coyotes and badgers.

Elk, mule deer, bighorn sheep, mountain goats, black bear, whitetail deer, and pronghorn antelope are major components of the wildlife community within the planning area. Mule deer occur throughout the area mainly associated with upland areas. Whitetail deer inhabit the riparian zones along the major drainages and periodically move into the adjacent BLM uplands.

Table 3.1
Mammal Species Within or Near the Planning Area

Badger (Taxidea taxus)
Black Bear (Orsus americanus)
Bighorn Sheep (Ovis canadensis)
Black-tailed Prairie Dog (Cynomys ludovicianus)
Bobcat (Lynx rufus)
Bushy-tailed Woodrat (Neotoma cinerea)
Coyote (Canis latrans)
Deer Mouse (Peromyscus maniculatus)
Desert Cottontail (Sylvilagus audubonii)
Dwarf Shrew (Sorex nanus)
Elk or Wapiti (Cervus canadensis)
House Mouse (Mus musculus)
Least Chipmunk (Tamias minimus)
Least Weasel (Mustela nivalis)
Little Brown Myotis (Myotis lucifugus)
Long-legged Myotis (Myotis volans)
Long-tailed Vole (Microtus longicaudus)
Long-tailed Weasel (Mustela frenata)
Masked Shrew (Sorex cinereus)
Meadow Vole (Microtus pennsylvanicus)
Merriam's Shrew (Sorex merriami)
Montane Vole (Microtus montanus)
Mountain Cottontail (Sylvilagus nuttallii)
Mountain Goat (Oreamnos americanus)
Mountain Lion (Puma concolor)
Mule Deer (Odocoileus hemionus)
Muskrat (Ondatra zibethicus)
Northern Grasshopper Mouse (Onychomys leucogaster)
Northern Pocket Gopher (Thomomys talpoides)
Northern River Otter (Lontra canadensis)
Olive-backed Pocket Mouse (Perognathus fasciatus)
Ord's Kangaroo Rat (Dipodomys ordii)
Porcupine (Erethizon dorsatum)
Prairie Vole (Microtus ochrogaster)
Preble's Shrew (Sorex preblei)
Pronghorn (Antilocapra americana)
Raccoon (Procyon lotor)
Red Squirrel (Tamiasciurus hudsonicus)
Richardson's Ground Squirrel (Spermophilus richardsonii)
Striped Skunk (Mephitis mephitis)
Vagrant Shrew (Sorex vagrans)
Water Shrew (Sorex palustris)
Western Harvest Mouse (Reithrodontomys megalotis)
Western Jumping Mouse (Zapus princeps)
White-footed Mouse (Peromyscus leucopus)
White-tailed Deer (Odocoileus virginianus)
Yellow-bellied Marmot (Marmota flaviventris)
Yellow-pine Chipmunk (Tamias amoenus)

Elk primarily occur in the Highwood Mountains-Square Butte corridor and in habitat associated with the Judith and Missouri River breaks. Bighorn sheep distribution extends to several allotments in the Dog Creek drainage and the Missouri River tributaries near Woodhawk Hill. Mountain goats are known exclusively in the Highwood Mountains and Round Butte to Square Butte. The herd was originally established through a transplant on Square Butte in 1971. MFWP's annual survey showed goat numbers reached a high of 79 on Square Butte in 1993 and were at a low of 27 in 2007. Goats were first recorded on Round Butte and the Highwood Mountains in 1992 and numbers in 2007 are at 31 and 68, respectively. It appears that a number of goats each year are moving west from Square Butte to Round Butte and the Highwood Mountains. There is concern that conifer encroachment on all aspects of Square Butte has lowered the quality of the goat habitat to the point that they are looking for better habitat. The BLM's objectives are to provide suitable habitat for the appropriate number of big game species identified for each hunting district.

3.8.2 Birds

The planning area provides habitat for numerous species of birds. Within the planning area there are about 240 species of resident, migratory and game birds including abundant waterfowl, grouse, turkeys, diving birds, pelicans, herons, birds of prey, shorebirds, gulls, terns, doves, owls, nightjars, kingfishers, hummingbirds, woodpeckers, flycatchers, shrike, vireos, jays, crows, larks, swallows, chickadees, nuthatches, wrens, bluebirds, thrushes, waxwings, warblers, tanagers, sparrows, buntings, blackbirds, orioles, and finches.

Table 3.2 is a list of BLM Sensitive Species known to occur within or near the planning area:

Table 3.2 BLM Sensitive Specie Within or Near the Planning Area
Baird's Sparrow (Ammodramus bairdii)
Black Tern (Chlidonias niger)
Brewer's Sparrow (Spizella breweri)
Burrowing Owl (Athene cunicularia)
Chestnut-collared Longspur (Calcarius ornatus)
Common Loon (Gavia immer)
Dickcissel (Spiza americana)
Ferruginous Hawk (Buteo regalis)
Franklin's Gull (Larus pipixcan)
Golden Eagle (Aquila chrysaetos)
Great Gray Owl (Strix nebulosa)
Greater Sage-Grouse (Centrocercus urophasianus)
Loggerhead Shrike (Lanius ludovicianus)
Long-billed Curlew (Numenius americanus)
Marbled Godwit (Limosa fedoa)
McCown's Longspur (Calcarius mccownii)
Mountain Plover (Charadrius montanus)
Northern Goshawk (Accipiter gentilis)
Peregrine Falcon (Falco peregrinus)
Red-headed Woodpecker (Melanerpes erythrocephalus)
Sage Sparrow (Amphispiza belli)
Sage Thrasher (Oreoscoptes montanus)
Sprague's Pipit (Anthus spragueii)
Swainson's Hawk (Buteo swainsoni)
Trumpeter Swan (Cygnus buccinator)
Veery (Catharus fuscescens)
Willet (Tringa semipalmata)
Wilson's Phalarope (Phalaropus tricolor)

The bald eagle was recently delisted from the threatened and endangered species list. The peregrine falcon was removed from the endangered list in 1999.

Bald eagle and peregrine falcon occurrence in the watershed is most probable during seasonal migration. Nesting and foraging habitat is available for bald eagles along the Judith River but nests have not been identified on this portion of the river. Potential cliff nest sites for peregrine falcons are available all around Square Butte but there is a limited amount of waterfowl areas to provide foraging opportunities for peregrines. There have been reports of peregrines on Square Butte during the nesting months but no aeries have been identified. There is abundant evidence of raptor use all around Square Butte but most

is thought to be from prairie falcon and golden eagles.

Tree nesting raptors such as Swainson's hawk, red-tailed hawk and great-horned owl are known to be present in cottonwood stands and isolated conifers in the planning area. Ground nesting raptors including ferruginous hawks, burrowing owls and northern harriers are also present. Burrowing owls and ferruginous hawks have been documented taking advantage of the prey opportunities provided by prairie dog towns.

Sage grouse distribution is limited to sagebrush steppe lands located in uplands west of Arrow Creek and on or near allotments west of Winifred in the Bloomfield and Whitehorse Butte areas. Approximately 17 active sage grouse strutting grounds (leks) are located on or near public land within the boundaries of the planning area. Several land management factors could be contributing to diminishing lek attendance in the area. Intermingled private land in the traditional grouse areas has been actively cultivated in recent years especially in areas near Winifred. Unregulated livestock grazing can be a detriment to sage grouse nesting success. Grazing must be managed to provide adequate herbaceous nesting cover under the sagebrush overstory in some portions of the grazing allotments. Some parcels of public land contain predominant or continuous stands of crested wheatgrass persisting from the Bankhead-Jones Land Utilization era. Many of these crested wheatgrass dominated lands exhibit little reinvasion of the native sagebrush community and comprise a monoculture with limited sage grouse value.

The mountain plover was proposed for listing as threatened in 1999 but withdrawn in 2003. The home range of the mountain plover includes the short grass prairie from northern Montana to southern New Mexico. Mountain plovers have not been documented in the planning area but potential habitat does exist for the species. The mountain plover may be considered a disturbed-prairie species preferring arid flats with very short grass and a high proportion of bare ground. Prairie dog towns and a few acres of short grass dominated sites within the watershed area provide potential habitat for the mountain plover.

Seven species of upland game birds are present in the planning area; Hungarian partridge, sharp-tailed grouse, sage grouse, blue grouse, ruffed grouse, Merriam's turkeys and ring-necked pheasant. Partridge are commonly associated with private cropland; sharp-tails are primarily located in the heads of brushy coulees and grasslands. Sharp-tail numbers have dropped during recent dry growing seasons, but 2007 was a successful nesting year. The mountain grouse species inhabit the forested parcels on Square Butte and along the edge of the Highwood Mountains. The ruffed grouse prefer deciduous habitats while the blue grouse use the forest edge in the spring, summer and fall and the high elevation Douglas fir in the winter. Pheasants are primarily found near farmland but also occupy well vegetated riparian areas. Merriam's turkeys can be found in most of the ponderosa habitat along the Judith River. Turkey numbers seem to be increasing in most of Fergus County from where they were in the early 2000's. The spring of 2008 resulted in poor nest success for all upland game birds because of the extremely wet and cool period in late May and early June.

The cottonwood and willow habitats along the stream corridors provide nesting and brooding habitat for many neo-tropical migrant species during the summer. Deciduous trees along the river's edge are unique in this area of predominant prairie grasslands, breaks and coniferous forested coulees and ridges; they provide valuable habitat for most bird species on the river. This deciduous forest habitat type occupies

a small percentage of the overall land area within the watershed area, and most is located on private lands.

3.8.3 Fish

Most of the Judith River within the affected area is designated as a substantial fishery. However, reaches of the Judith are impacted by chronic and periodic dewatering. Sauger are common, year round residents in the Judith River. Sauger were identified as a Montana Species of Special Concern in 2000. Other BLM sensitive species likely to inhabit the Judith River, but have not been identified in this reach, are the Northern redbelly x finescale dace and the Blue sucker. The northern redbelly x finescale dace is a hybrid species that prefers clear waters and commonly co-occurs with the northern redbelly. Blue suckers would typically be migrants to the Judith River in times of high flows. Other species known in this reach include game fish particularly rainbow and brown trout and an occasional pike. Prairie species are common including common carp, fathead chub, longnose and white suckers, shorthead redhorse, stone cats, goldeneyes, burbot and whitefish.

Arrow Creek and other prairie streams such as Dog Creek and minor tributaries within the planning area are known to contain species such as longnose dace, fathead chub, lake chub, sand shiners, plains and brassy minnows. The planning area also contains a small portion of BLM lands adjacent to Highwood Creek which is a moderate to substantial fishery with mottled sculpin, brook, brown and rainbow trout.

3.8.4 Amphibians and Reptiles

Amphibians occurring in the planning area include: boreal chorus frog, Columbia spotted frog, Great Plains toad, Northern leopard frog, plains spadefood, tiger salamander, western toad and the woodhouse toad, Snakes found in the area include common, plains and terrestrial gartersnakes, sagebrush lizard, eastern racer, gophersnake, short-horned lizard, painted turtle, prairie rattlesnake, milksnake, spiny softshell, and western hognose snake. The short-horned lizard, spiny softshell turtle, and painted turtle are also likely to be present in the planning area.
BLM designated Sensitive species are the short-horned lizard, spiny softshell, northern leopard frog, plains spadefoot, and western toad. Populations of many amphibian species appear to be in a sharp decline in throughout the region.

Information regarding BLM Sensitive Species and distribution and occurrences and other non-game data was derived from the Montana Natural Heritage Program. For more information on wildlife and BLM Sensitive Species, this database is located on the internet at: http://nhp.nris.mt.gov/.

3.9 Cultural Resources

The BLM broadly defines cultural resources as any traditional lifeway belief or cultural property. Cultural properties are defined as distinct evidence in areas of past human occupation, activity, and use. Traditional lifeway beliefs are defined as traditional value systems of religious beliefs, cultural practices, or social exchange that are not closely and tangibly defined or identified with definite locations (JVP, 1992).

Early peoples in the study area were mobile hunters and gatherers throughout and up until the historic period. The following brief overview explains changes through time as summarized by other archaeologists (Frison 1978; Ruebelmann 1983).

The Early Prehistoric period (roughly 10,000 – 5,700 B.C.) is characterized by a tool assemblage consisting of large, lanceolate and/or fluted spear points, and multipurpose tools made of stone or ivory. Subsistence strategies specialized in hunting megafauna but smaller game and plant foods were

utilized as well. Typical site types include kill and butchering sites, open air camp sites, and limited activity sites.

The Middle Prehistoric period (roughly 5,000 B.C. – A.D. 400), is characterized by a shift in tool types from thrusting spears with lanceolate spear heads to spear throwers and darts with diagnostic spear points. Groundstone tools also begin to show up in the assemblages. Subsistence strategies shift from more specialized hunting of megafauna to a broader spectrum strategy which becomes focused on bison by the end of this period. Plant procurement and use also occurs. Evidence of storage in the form of storage pits begins to show up during this period as do large cooking pits. Site types typical of this period include kill and butcher sites, camp sites, and rock shelters. Stone circle sites are rare in this area.

The Late Prehistoric period (roughly A.D. 500 – 1800), is characterized by a technological shift from spear throwers and darts to bow and arrows. Tool assemblages consist of small side, corner, or tri-notched points. Some ceramics become evident in the record in limited number on the Northwest Plains at this time. Grooved mauls, bone fleshers, and shell beads are common. Subsistence strategies continue to focus on bison procurement. Large communal bison kill/jump sites, rock shelters, wind breaks, and caves are the site types typically found in this area. Stone circle sites are rarer compared to northern areas.

During the historic period, settlers by the thousands came into the area to live on homesteads. Germans and Scandinavians came from the Midwest, as did eastern European immigrants like Bohemians and Yugoslavs (JVP, 1992).

Cultural sites can be considered significant for several reasons; some because information about the past can be learned through methodical study of the sites, while other sites communicate a sense of a particular time period they represent in history. Finally, sites can be considered to be important because of the current use or values associated with the location.

An important consideration for management actions in this area is preserving the values of the cultural properties contained within. In order to preserve the integrity of a cultural property, it is sometimes necessary to preserve the location in which the cultural property is found. This is an important consideration when the management actions have the potential to affect the location of a cultural property, thus affecting the overall integrity of the cultural property.

A review of the cultural resource site and inventory databases maintained by the Montana State Historic Preservation Office and the BLM identified 97 cultural resource inventories completed within the planning area (review completed August 14, 2008). These inventories were conducted on federal, state, and private land for a multitude of project types (i.e. land exchanges, range projects, fuels reductions, roads, etc.). Those inventories led to the documentation of 107 cultural properties, once again on federal, state, and private land. Table 3.3 shows the breakdown of those sites and their eligibility for inclusion on the National Register of Historic Places.

Table 3.3
Cultural Properties
Within the Planning Area

	Eligible	***Ineligible***	***Unevaluated***
BLM	2	14	18
Other*	14	9	50
Total	16	23	68

*Other = Private, State, other Federal

The prehistoric sites within the planning area include areas of lithic scatter, camp sites, fire hearths/roasting pits, rock cairns, and stone circles. The majority of sites appear to be single occurrence surface

collections, but with the lack of excavation it is difficult to confirm that.

The historic sites relate to homesteading, early agriculture, railroad, and transportation.

The majority of the sites have not had their eligibility evaluated; they are managed as if they are eligible until a determination is made.

3.10 Surface Water

The Judith River is the major river in the Upper Arrow Creek planning area. Significant intermittent and perennial streams within the planning area include Arrow Creek, Dog Creek, Taffy Creek, Wolf Creek, Coffee Creek, Cowboy Creek, Cutbank Creek, Rose Creek, Highwood Creek, Surprise Creek, Cottonwood Creek, and Little Battle Creek. All other water courses in the watershed are ephemeral, flowing only in response to snow melt or intense summer storms.

Hydrologic conditions within the planning area are influenced by soil and vegetation conditions, road networks, diversions, impoundments, and stream channel modifications.

In the type of lands administered by the BLM in the planning area, runoff is generated by precipitation on the watershed. Soil and vegetation conditions within the planning area may have a small influence on runoff. Agriculture and livestock grazing has led to a change in plant cover that has significantly reduced soil-moisture storage. The altered infiltration and evapotranspiration rates have resulted in an increase in the timing and peak of runoff. Although the annual water yield is more than likely larger than historic conditions, effluent flows throughout the latter summer have probably decreased in the major drainage bottoms.

The health of streams within the planning area was assessed with the Montana Riparian and Wetland Association (MRWA) Lotic Wetland Health Assessment for Stream and Small Rivers and the PFC checklist (USDI, 1998). The following streams were assessed on BLM land within the planning area: Arrow Creek, Cottonwood Creek, Cutbank Creek, Davis Creek, Dog Creek, Judith River, Little Battle Creek, Ole Coulee, Rose Creek, Taffy Creek, Alder Creek, Braun Creek, Highwood Creek, Lacey Creek, and unknown tributaries to Lepleys, Little Battle, and Mansfield Creeks. Lentic wetland assessments were also completed on BLM land on Big Lake, Kingsbury Lake, and Shonkin Lake.

A total of approximately 23.51 miles of lotic wetland and 50.99 acres of lentic wetland were assessed. The acres of lentic are only the acres associated with a buffer width of the BLM land. Big Lake, Kingsbury Lake, and Shonkin Lake are significantly larger than 51 acres, but BLM is the minority land holder on these waterbodies. A total of 7.44 miles were PFC, 4.62 were FAR (upward trend), 5.95 were FAR (static), and 5.5 miles were NF. Riparian areas that were FAR or NF because of causes that are within BLM's management capabilities such as weeds or livestock grazing require corrective actions, 9.1 miles within the planning area were not PFC because of livestock and/or weeds. On the lentic sites, 28.09 acres were PFC, and 22.9 acres were FAR (static). The lentic sites were FAR because of an abandoned railroad right-of-way that dissected the wetland.

The Judith River has the most stream miles on BLM within the planning area. BLM has approximately 11.15 miles of streambank on the Judith River. Some of these miles are within the same river reach, but individual assessments were completed for each side when the river was large enough to preclude easy crossing of livestock. Noxious weeds are a very large issue on

the Judith. Spotted knapweed canopy cover and density distribution is very high. Based upon observation, channel morphology and substrate particle size distribution may depart from historic conditions. It appeared that the width to depth ratio and percent fines may be larger than what would have been found under the natural setting. This may be a result of chronic dewatering and other impacts within the watershed. Riparian area vegetative condition on the Judith within the planning area seems to be dependent upon the level and location of concentrated use by livestock because some areas were in good condition with well vegetated streambanks and excellent woody species regeneration. However, other locations had excessive streambank erosion, considerable bare ground, and a lack of desirable riparian plant species as a result of livestock use. Approximately 5.05 miles out of the total of 11.15 miles were not meeting the riparian standard because of livestock grazing.

Three streams within the planning area are listed as water quality impaired by Montana Department of Environmental Quality (MDEQ) and have a significant amount of BLM land bordering the waterbody or within the watershed. They are the Judith River, Arrow Creek, and Dog Creek. Arrow Creek is listed in water quality category 2B, which means that available data and/or information indicate that a water quality standard is exceeded due to an apparent natural source in the absence of any identified anthropogenic sources. Dog Creek is listed in water quality category 5, which means that one or more uses are impaired and a Total Maximum Daily Load (TMDL) is required. Probable causes are nitrate/nitrite and sedimentation/siltation, and probable sources are grazing in riparian or shoreline zones. The Judith River is listed in water quality category 4C, which means that TMDLs are not required because there is no pollutant-related use impairment identified. Probable causes are alteration in stream-side or littoral vegetative covers and physical substrate habitat alterations. Probable sources are agriculture, grazing in riparian or shoreline zones, loss of riparian habitat, and rangeland grazing.

Impaired Streams and Probable Sources According to MDEQ are listed in Table 3.4 below:

Table 3.4
Impaired Streams

Stream Segment	***Probable Causes***	***Probable Sources***
Judith River from Big Spring Creek to mouth	Alteration in stream-side or littoral vegetative covers	Agriculture Grazing in Riparian or Shoreline Zones Loss of Riparian Habitat Rangeland Grazing
Arrow Creek from Surprise Creek to the Missouri mouth	Iron	Natural sources
Coffee Creek from headwaters to the mouth of Arrow Creek	Nitrate/Nitrite (Nitrite + Nitrate as N) Selenium Total Dissolved Solids	Animal Feeding Operations (NPS) Crop Production (Crop Land or Dry Land) Natural Sources
Dog Creek from Cutbank Creek to the Missouri mouth	Nitrate/Nitrite (Nitrite + Nitrate as N) Sedimentation /Siltation	Grazing in Riparian or Shoreline Zones

Some of the riparian areas on the Judith River had substantial streambank erosion, considerable bare ground, and a lack of desirable riparian plant species that trap and filter sediment. This may be

contributing pollutants to the water quality impaired stream, and BLM has the responsibility to adjust grazing practices to ensure BMPs are followed to generate an improving trend in conditions. Implementing BMPs is how BLM mitigates non-point source pollution and complies with the Clean Water Act and Montana Water Quality Act. The BLM is committed to the objectives of the Federal Clean Water Act to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Federal agencies are obliged to meet state water quality standards that protect beneficial uses of lakes, rivers, streams, and wetlands.

The BLM assessed 2.1 miles of Dog Creek on BLM within the reach identified as water quality impaired by MDEQ. Vegetative condition was good with healthy streamside buffers of riparian vegetation. This implies that grazing BMPs are being followed, and non-point source pollution is being at least partially mitigated by buffers that trap and filter sediment and decrease the amount of fecal coliform and nitrates entering the waterbody.

A majority of the planning area is located within either the Judith-Arrow or Bullwhacker-Dog subbasins. Bullwhacker-Dog is currently under TMDL development, and TMDLs have not been started in the Judith-Arrow subbasin. Prior to the adoption of a water quality restoration/ TMDL plan, the BLM, through a memorandum of understanding (MOU) with MDEQ, agrees to use "reasonable land, soil and water conservation practices" to prevent harm to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife.

3.11 Soils

Soils within the watershed area developed primarily from sedimentary rock (shales, siltstone, and sandstone) of Lower and Upper Cretaceous age, and from lesser amounts of slope and recent alluvium. Soil patterns are complex and vary in physical and chemical properties, productivity, and erodibility. Soluble salts and sodium are present in most soils of the area. Vegetation composition and production are affected where soils have high concentrations of salts.

Most of the gently sloping to steep uplands and escarpments are comprised of either clayey soils weathered from fissile shales or sandy soils weathered from sandstone. These sedimentary soils are usually vulnerable to degradation and highly erosive because of extreme physical properties such as high clay content, slow permeability, very high surface runoff, relatively shallow to moderate depth (less than 40 inches) to bedrock, droughty, and sparse vegetative ground cover. Active geologic erosion is observed on these landscapes. Erosion can be accelerated by surface disturbance, especially on steep and very steep slopes when the protective vegetative cover is removed

Areas of steep or very steep (>20% slope), barren or nearly barren land are dissected by many drainage channels and have exposures of consolidated sedimentary beds of shale and sandstone.

Alluvial soils on nearly level to undulating slopes along floodplains and stream terraces consist of the Glendive, Havre, and Harlem series. These soils are important because of their high vegetative production potential. Soil properties are variable and can differ over short distances. These soils range from sandy to clayey, poorly drained to well-drained, and slightly to moderately erosive. Associated ecological site: Overflow, 11 to 14 inch Ppt. zone, sedimentary plains, central.

Common ecological sites found in the affected area are silty 11-14", shallow clay 11-14", shallow 11-14", clayey 11-14" and thin silty 15-19".

Complete descriptions for the listed soil series and ecological sites are available on the following internet sites:

http://soils.usda.gov/technical/classification/osd/index.html (soil series)
and
http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=30071&MenuName=menuMT.zip (ecological sites).

Included in the series descriptions are taxonomy, horizon descriptions, range of characteristics and other pertinent information.

3.12 Air Quality

Air quality in the Upper Arrow planning area is generally considered good to excellent most of the year, meeting air quality standards set forth by the National Clean Air Act (U.S. Congress, 1967, amended 1972, 1977). All of the lands within and adjacent to the planning area are in a Class II airshed as designated by the 1977 Clean Air Act.

A planning and management process, "Prevention of Significant Deterioration" (PSD), was introduced as part of the 1977 Amendment to the Clean Air Act. These PSD requirements set limits for increases in ambient pollution levels and established a system for preconstruction review of new, major pollution sources. Three PSD classes have been established. Class I allows very small increases in pollution; Class II allows somewhat larger increases; and Class III allows the air quality to deteriorate considerably. In general, Class I is designed for pristine areas where almost any deterioration would be significant. Class II allows for moderate, well-controlled growth and Class III allows pollutant levels to increase considerably (JVP).

The high and low pressure weather systems that move through central MT strongly influence local climates and occasionally affect air quality within the planning area. These weather patterns may affect the air quality by moving suspended pollutants into the local airshed. During the summer and winter months, atmospheric conditions tend to be more stable, reducing particulate dispersal which may negatively affect air quality. Spring and fall typically have atmospheric conditions that favor smoke/particulate dispersal.

Major air pollutants include dust generated by naturally dry, windy conditions, smoke from wildland fires, and smoke and dust created by agricultural operations. Minor pollutants could include farm machinery exhaust, crop harvest dust, recreational vehicle and equipment exhaust, and road maintenance operations.

Topography within the watershed consists of flat to rolling uplands and mountains broken with steep canyons. Inversions may develop and trap suspended particulate matter for longer durations within these drainages.

3.13 Economics/Sociology

The planning area is situated within Fergus, Choteau, and Judith Basin Counties in central Montana. Agriculture and agricultural processing is the major industry and provides most of the employment in the area. Fergus and Judith Basin Counties have roughly an even balance between livestock and crop receipts. Choteau County is primarily known for grain production and commonly ranks near the top of Montana counties in wheat and barley production. Forage on BLM lands contributes to the areas' overall livestock receipts. Depending on the percentage of public land contained within a particular allotment, the amount BLM land contributes to individual producers varies significantly.

BLM land comprises 49, 861 acres within the planning area, approximately 3 to 4% of the total acreage of Fergus, Choteau and Judith Basin counties combined.

Within the Upper Arrow Creek planning area, 62 permittees graze livestock on public land administered by the BLM. All of the permittees have cattle operations; some engage in supplemental farming and/or sheep or indigenous animal operations. A total of 6164 AUMs are permitted in 64 allotments.

Recreation opportunities and associated services provided by BLM lands are also major contributors to the overall economy in the region.

The three counties represented are sparsely settled areas located in central Montana. The 2006 populations of these counties combined 19,055. All three have undergone population decreases since the last survey. (U.S. Bureau of Census) This is likely due, in part, to age demographics and an overall decline in agricultural employment.

Agricultural enterprises are predominately family operations with a long history in the area. Many of these ranches have grazing leases on state lands that are intermingled with private and public land. Issues currently affecting many of these ranches include increasing recreation pressures, increasing land values, and influx of absentee and/or corporate ownership.

3.14 Areas of Critical Environmental Concern/ Wilderness

The watershed/planning area contains one Area of Critical Environmental Concern (ACEC), the Square Butte Outstanding Natural Area. This area includes 1,947 acres of BLM lands located ten miles south of Geraldine, Montana. This area was designated an ACEC in 1992, via the JVP RMP as a means of recognizing specific management actions to protect natural endemic systems, cultural sites, scenic qualities, rare geologic features and key wildlife viewing sites.

The JVP RMP implemented the following management prescriptions in this ACEC: Surface disturbing activities such as transmission lines, roads, communication sites, and pipelines are prohibited, as is the sale of forest products, unless necessary for stand preservation.

There are currently no designated BLM Wilderness areas within the study area. There is one Wilderness Study Area (WSA), Square Butte, which is also an ACEC, as described in the beginning of this section.

Chapter 4
Environmental Effects

This chapter is the scientific and analytic basis for the comparison of the alternatives outlined in Chapter 2. The potential environmental impacts of each alternative in relation to the issues and concerns identified in Chapter 1 are described.

The information in this chapter is organized into the following headings:

The following critical elements of the human environment were considered but not analyzed. These elements would not be affected by the proposed action or current management and will not be discussed further.

- Environmental Justice
- Farmlands (Prime or Unique)
- Native American Religious Concerns
- Wastes (Hazardous/Solid)
- National Energy Policy (Executive Order 13212)
- Wild & Scenic Rivers (none present in the planning area)

4.1 No Action Alternative: Continuation of Current Management

This section discusses the impacts of renewing grazing permits/leases with current terms and conditions and no management changes to environmental elements in the planning area.

4.1.1 Rangelands/Livestock Grazing

Implementation of the No Action Alternative would not impact livestock grazing because no changes to current operations would be proposed. Impacts to rangeland resources will be discussed below in the upland and riparian health sections.

4.1.2 Upland Range Health

Under current grazing management, upland sites that are meeting standards would slowly improve or remain stable (Appendices E and F). All available information indicates a static or slight upward trend on upland sites meeting standards.

Upland sites not meeting standards as a result of livestock grazing would continue to decline in productivity and upland health. Without periodic rest or deferment from grazing during the growing season, perennial grasses in these degraded areas would continue to have low vigor and density with limited reproduction of desirable grasses occurring. Annual grasses, shallow rooted perennial grasses, forbs, cactus and fringed sagewort would continue to dominate, and likely increase, especially in times of drought.

Under current management, some allotments are not meeting the upland standard due to:

- Poor livestock distribution
- Unfenced farmland
- Lack of grazing rotation schedule
- Continual season-long grazing
- Large acreages of nonnative species, including crested wheatgrass

Plants on these allotments are not vigorous and lack sufficient root reserves and root mass to adequately cope with drought. These allotments are at high risk of continued deterioration and may eventually drop into an early seral stage, with lower plant diversity, loss of topsoil and productivity.

There are no known impacts to BLM Sensitive plant species.

4.1.3 Riparian Health

Under current grazing management, riparian sites that are meeting standards (Appendix G) would improve or remain stable. All available information indicates a static or upward trend on riparian sites meeting standards.

Riparian sites not meeting standards as a result of livestock grazing (Appendices E, G) would remain static or continue in a downward trend since no changes in livestock grazing would occur. Without periodic rest from grazing during the growing season, perennial grasses, forbs and woody species in these degraded areas would continue to have low vigor and density with limited reproduction. Riparian plant community succession and streambank stabilization would be interrupted or impeded leading to degradation and potential loss of functioning riparian areas.

4.1.4 Noxious Weeds

Under current management, noxious weed control within the planning area is somewhat inconsistent. Some permittees/ lessees have signed cooperative weed control agreements and are actively involved in weed control on their allotments; others have no agreements and are not involved in weed control. The present level of weed control could lead to an increase in noxious weeds in the planning area, especially on grazing allotments lacking cooperative weed control agreements. The No Action Alternative would not require noxious weed control cooperative agreements as a term and condition of the grazing permit/lease.

4.1.5 Recreation/Visual Resource Management

No impacts to recreation would occur under this alternative.

No impacts (direct or cumulative) would occur to visual resources under this alternative.

4.1.6 Wildlife

Under current management, the riparian health, upland health and noxious weed infestation issues that have been identified would not improve. Upland sites not meeting standards as a result of livestock grazing would continue to decline in productivity and upland health. Browse,

forbs and grass availability for elk, deer, antelope and mountain goats would continue to decline. Browse availability for big game species would continue to decline. Forage and cover for birds and other small mammals would also deteriorate. Over time, the reduction in wildlife forage and increased levels of noxious weeds would cause a cumulative loss in the value of these isolated unhealthy areas as wildlife habitat.

Improvement of non-functioning riparian areas would not occur and the trends would remain static or continue to degrade. Unhealthy riparian areas would create a negative impact to most wildlife species. Vegetative diversity and structure that are associated with healthy riparian areas would not be available for cover, foraging and nesting areas for many species.

Most proper functioning riparian systems should continue to regenerate cottonwood and willow stands and provide quality habitat for a wide variety of wildlife species. Healthy cottonwood stands with diverse herbaceous understory would continue to be a benefit to neotropical birds.

Noxious weeds would continue to spread because the present weed control program has not kept pace with infestation growth. The diversity of native plant species, particularly along the smaller riparian systems, would eventually decline to the point that the habitat would be of minimal value for cover and forage to wildlife.

4.1.7 Fire Management

Regardless of the alternative chosen, wildland fire suppression would be in accordance with the Fire/Fuels Management Plan Environmental Assessment/Plan Amendment for Montana and the Dakotas (September 2003), and the Central Montana Fire Zone, Lewistown Field Office (LFO), Fire Management Plan (September 2004).

Most of this planning area lies within the LFO "Breaks" Fire Management Unit (FMU). Current wildland fire suppression policy within this FMU is to utilize appropriate fire suppression strategies based on safety, current fire danger, values at risk, cost, suppression resource availability and predicted weather. Each fire occurrence would be evaluated on these elements and a determination made as to the most appropriate course of action. Under certain circumstances, appropriate strategies may include using indirect suppression tactics and utilization of natural fuel breaks to return fire to its natural role in the ecology of the area.

4.1.8 Cultural Resources

Under current management, cultural sites would remain static to slightly deteriorating. Direct impacts to specific sites from BLM approved actions would be reduced or eliminated where possible. Visual impacts from BLM actions would be mitigated or eliminated where setting contributes to significance. Less specific impacts such as the gradual loss or deterioration through erosion or weathering would continue. Loss and damage would also continue to occur as a result of unauthorized and unlawful collection and/or vandalism.

Significant cultural sites would be identified for stabilization or mitigation of deterioration as time and funding allow.

4.1.9 Surface Water

Water quantity and quality affected by flow diversion, impoundments, and stream channel modifications would not change. Where infiltration and evaporation rates are altered because of change in plant cover, the time of concentration and water storage within the planning area would remain below natural levels.

This alternative would not address the water quality impaired streams within the planning

area or comply with the TMDL process, Clean Water Act, or the memorandum of

understanding with MDEQ since no improvements would be made to upland or riparian vegetation. Those public lands in the planning area that are in less than Proper Functioning Condition would continue to possibly contribute pollutants such as sediment, nitrates, fecal coliform, and warmer water to streams.

4.1.10 Soils

This alternative would generate the highest level of soil loss from wind and water erosion. In some cases, accelerated erosion is occurring on allotments not meeting the upland standard. If no management changes are made, soils in these allotments would continue to lack sufficient ground cover and root density to resist erosion and would continue to erode at levels higher than expected for the site. Infiltration of precipitation into soils of these sites would be reduced by soil compaction, lack of plant and ground cover to intercept overland flow and lack of organic matter near the soil surface. Accelerated erosion would not occur on allotments that are meeting the upland standard as plant cover and type on these allotments would remain adequate to resist erosion.

4.1.11 Air Quality

Continuation of current management would not impact air quality.

4.1.12 Economics/Sociology

Continuation of current management could create negative economic impacts to permittees/lessees with allotments not meeting health standards and in a downward trend. Continued degradation of public rangelands would result in decreased production which would eventually lead to lower carrying capacities, reduced livestock numbers and decreased resistance to drought. Allotments meeting health standards would not be impacted by this alternative.

Under current management there would be no impacts to permittees/lessees or the local communities in the planning area.

4.1.13 ACECs/Wilderness

The No Action Alternative would not impact ACECs or Wilderness directly or cumulatively.

4.2 Proposed Action Alternative

The 41 allotments listed in Table 4.1 have no administrative changes or proposed modifications to the permit/lease.

Table 4.1

Allotment Name	***Allotment No.***
Anderson Coulee	10027
Antelope Coulee	09668
Big Coulee	09764
Big Coulee East	09656
Boyce C Individual	20015
Brown Coulee	20014
Burnside	20018
Cassidy Place	09679
Cowboy Steele Creek	19814
Davis Creek	09861
Demars	20026
Eagle Butte	09856
East Peak	19844
Gallatin	20011
Green Royce	20034
Jones Cone	20005
Katzman	20022
Kendle Place	09676
Kinkelaar	20044
Lander Crossing	09852
Leach Place	09759
Linse	20052
Lost Lake Ranch	09725
Merrill Creek	09828
Merrimac	09776
Norman Place	09788
Olsen	05099
Olson	20087
Rose Creek	20100
Shaw Creek	19835
Suffolk North	20080
Surprise CK Badlands	19691
Upper Coffee Creek	09746

Table 4.1	
Allotment Name	***Allotment No.***
Upper Cowboy Creek	09827
Upper Wilson Coulee	09706
Walters	20088
Walling	20089
Weller Place	10086
West Shonkin Creek	09830
Wherley	20091
Woodcock	09853

The following four allotments listed in Table 4.2 are also meeting standards and guidelines for rangeland health or were determined to be not meeting due to a cause other than current livestock grazing. These allotments are undergoing a change of ranch management. Other than terms and conditions listed in the Rangeland Administration section located in Chapter 2.3.1 and the Noxious Weed section located in Chapter 2.3.4, modifications to each permit/lease will be a change of operator name only.

Table 4.2	
Allotment Name	***Allotment No.***
Arrow Creek	09783
Big Lake	09833
Cowboy Creek	09831
Salt Creek	20047

Six allotments listed below in Table 4.3 currently have a type use listed as Active. These allotments would be changed from Active type use to Custodial type use. This change is administrative in nature and does not impact AUM's, seasons, numbers or livestock class.

Table 4.3	
Allotment Name	***Allotment No.***
Belt Creek	09666
Cutbank Creek	20007
Jiggs Flat	09787
Kelly Bottom	04835
Posthill Creek	09754
Upper Shonkin	09749

On the 51 allotments listed in Tables 4.1, 4.2 and 4.3, there are no changes in the proposed action for individual allotments that would result in impacts to upland/riparian health, noxious weeds, livestock grazing/rangelands, recreation/ VRM, wildlife, fire management, cultural resources, surface/groundwater, soils, air quality, economics/sociology or ACECs. These allotments are either 1) in conformance with standards and guidelines for rangeland health; 2) making significant progress toward achieving standards and guidelines for rangeland health; or 3) not in compliance with standards and guidelines for rangeland health due to reasons other than current livestock management practices.

There have been no impacts, cumulative or otherwise, associated with grazing permit/lease renewal identified when these conditions are met. These allotments will not be considered in further detail.

The remaining 13 allotments listed in Table 4.4 below have changes proposed that may result in impacts to resources within the planning area. These impacts may include ground disturbance or wildlife displacement due to the construction of range improvement projects or impacts to vegetation and other resources due to a change in seasons of use and/or numbers of livestock. Impacts will be analyzed by issue for these allotments.

Table 4.4	
Allotment Name	***Allotment No.***
Erie	20030
Judith River	20051
Lepley's Creek	09782
M Lazy M	09860
Mees Cabin Trail	10085
Mendel	20057
Milwaukee	09677
Norman	20063
Pownal	09753
Smith Bolstad Common	20013
TJ	09670
Warneke	20017
Wolf Creek Common	20016

4.2.1 Rangelands/Livestock Grazing

The proposed action would improve conditions on allotments not meeting standards through various types of rotational grazing systems or limited seasons of use. Water developments,

additional fencing, salting, mineral placement, and changes in season of use would better distribute livestock and

improve overall rangeland conditions. If monitoring indicates significant progress toward meeting standards is not occurring, management adjustments/corrective actions would be initiated as described in the Adaptive Management section found in Chapter 2.3.9.

The proposed action would have no impacts on livestock grazing on the 51 allotments listed in Tables 4.1, 4.2 and 4.3. Livestock grazing would continue as currently permitted. Grazing allotments listed in Table 4.4 with proposed changes to the grazing season, livestock numbers, or percent public land may be impacted by the proposed action; however, no increases or reductions are proposed for carrying capacities. Impacts would be limited to construction of range improvement projects, timing of grazing use and number of livestock.

Range improvement projects and permit/lease modifications are designed to improve resource conditions which would facilitate significant progress toward meeting rangeland health standards. Grazing allotments meeting rangeland health standards would have increased productivity, resistance to drought and improved flexibility which would positively benefit rangeland resources.

4.2.2 Upland Range Health

The upland health standard would continue to be met on allotments already in conformance with this standard (Appendix E). Trends on these allotments would remain static or improve. No range improvements are proposed on any of these allotments. Proposed actions on the Judith River, Warneke, Lepley's Creek and Norman Allotments would not impact upland health.

The following allotments have proposed changes that could potentially impact upland health:

Erie #20030
The Erie Allotment contains 10 pastures. These pastures are managed in a short duration, high intensity grazing system. Typically pastures are utilized in a modified, rest-rotation often with multiple pastures receiving rest. The proposed modification to the mandatory terms and conditions would provide for early and late season use thereby facilitating implementation of this grazing system. This management was determined to be yielding significant progress towards meeting upland health standards. The proposed action would positively impact uplands by allowing multiple rest pastures within a given year. Vegetation within rested pastures would accumulate root mass, carbohydrate reserves and set seed with no disturbance from livestock grazing during an entire year.

M Lazy M #09860
The season of use would be modified from 5/1-11/30 to 11/1- 6/1. Grazing during the winter season would have positive impacts on upland health by eliminating much of the hot season use on native plants. Use during the May growing season could still have impacts on cool season perennial species, but may also aid in controlling Japanese brome and cheatgrass. Overall, changing grazing use to the dormant season would benefit upland health.

The optional projects described in the proposed action would provide further benefit to uplands. Specifically, the electric fence proposed in the SW1/4 of Section 1 (T19N, R12E) would allow for increased management of the parcel and adjacent croplands. The vegetation treatment would reduce dense concentrations of prickly pear that would likely favor desirable grass species.

Mees Cabin Trail #10085
The proposed action would change the public land percent from 52% on grazing record 2506091 and 67% on grazing record 2506083 to 62%. This change would be

primarily administrative and would not impact length of season or number of cattle for the allotment. Carrying capacity would remain the same. Management of the allotment would not be changed.

Mendel #20057
Changing the season of use from 4/1-11/30 to 5/15-12/ 28 would provide more growing season deferment for many cool season species. There would potentially be increased cover during the early season. This use may also favor crested wheatgrass.

Milwaukee #09677
Implementation of the proposed projects would allow for early season use of crested wheatgrass without negatively impacting riparian areas along Dog Creek. The projects would facilitate early season management of crested wheatgrass while allowing the portion of Dog Creek to be managed with crop residuals to reduce impacts to streambed and banks while soils are saturated.

Pownal #09753
The proposed action to modify the current season of use (3/1-2/28) to 16 cattle from 11/1-5/24 would eliminate hot season grazing from the Pownal Allotment. This would still allow for spring use on Japanese brome and cheatgrass while deferring use on desirable native bunchgrasses. The majority of grazing would be done in the winter which would have benefits to native uplands by deferring most of the grazing during the growth season.

Smith-Bolstad Common #20013
Percent public land for CEB (GR#2506012) portion of the common would be changed from 100% to 42% to accurately reflect the actual percent public land within the allotment. This would allow livestock numbers to be increased to represent the amount of livestock that utilize the #2506012 portion of the allotment. This change would be primarily administrative and would not impact length of season or number of cattle for the allotment. Carrying capacity would remain the same. Management of the allotment would not be changed.

TJ #09670
Modification to the grazing lease from 2 cattle 3/1-12/31 to 14 cattle from 6/14- 9/1 would defer growing season use of native, perennial bunchgrasses. Allowing a larger percentage of desirable, native vegetation to complete annual growth and develop seed will allow for an increase in reproduction and result in improvements to upland health.

Wolf Creek Common #20016
The GR#2506036 portion of the allotment would be changed to provide an earlier season of use. Livestock numbers would be reduced accordingly to accommodate the extended grazing season. Use within this allotment is based, in large part, on water availability. With limited ability to hold water, uplands would receive limited livestock use due to patterns of livestock distribution. Use would still be at, or below, the carrying capacity of the allotment. Due to these factors, modification of the permit would result in increased utilization.

4.2.3 Riparian Health

Thirty-four of the 51 allotments listed in Tables 4.1, 4.2 and 4.3 do not have riparian resources. 7 are meeting riparian standards with riparian reaches mostly in Proper Functioning Condition (PFC). The remaining 10 allotments were not meeting the riparian standard for reasons other than current livestock management. These allotments are mainly Functioning-At-Risk (FAR) with upward trends. Significant progress is

already being demonstrated toward meeting the riparian standard. There are no impacts to riparian resources associated with the proposed action on these allotments.

Six of the allotments listed in Table 4.4 do not contain riparian resources and one, Wolf Creek Common, has riparian that is in PFC. The remaining six allotments are not meeting the riparian health standard due to livestock grazing. Trends on these allotments are static or degrading. Management changes have been proposed by the BLM and permittees/lessees to improve riparian area health and grazing management. Riparian areas within these allotments would benefit from the proposed changes by significantly progressing toward PFC. Riparian reaches on the Judith River within the Wolf Creek Common Allotment are already in PFC and were determined to be meeting the riparian health standard. However, a change was proposed by the operator of grazing record #2506036 that could potentially impact riparian health. The proposed action for that allotment will be analyzed below.

Noxious weeds are a large component affecting riparian health. Development and implementation of weed cooperative agreements could potentially have a positive impact on riparian health on all affected allotments. The proposed action would increase Integrated Pest Management (IPM) efforts within the riparian zone including biological control, selective, localized herbicide control and the possibility of sheep grazing. Weed control efforts would emphasize prevention of spread into the uplands and containment and control of existing weed populations within the riparian zone. A combination of these weed control methods would have a positive effect on riparian area health by reducing the existing noxious weed infestations.

The following allotments have actions proposed that could impact riparian health:

Judith River #20051

Under this alternative, a cross fence would be constructed separating a majority of the allotment into a north and south pasture. The area that would be the south pasture contains a majority of the BLM land and currently receives the most livestock use on the Judith River because of accessibility. With the proposed action, the south pasture would be limited to six weeks of use either early in the season or later in the fall. Limiting the season of use in the south pasture to six weeks outside of the hot season compared to season long grazing would increase the possibility of cottonwood/willow recruitment, minimize streambank alteration, and allow recovery of streambank stabilizing herbaceous species.

Lepley's Creek #09782

The spring source area and head of Alder Creek would be exclosed. The pipeline would be extended and the stock tank removed from the spring area. This would promote fast recovery of streambank vegetation and wetland plant species around the spring source. Willow species would have the opportunity to recover.

Milwaukee #09677

Currently, this allotment is used in the spring and early summer months when moist streambanks are most vulnerable to alteration. Under this alternative, the riparian area would be fenced away from the crested wheatgrass portion of the allotment. A pipeline and tank would be extended from an existing line so that the crested wheatgrass portion of the allotment would be used early season. The riparian area portion of the allotment would be used after August 15th following crop use on private land. This would keep livestock off of Dog Creek when streambanks are most vulnerable. Woody species recruitment would still be somewhat limited because of the season of use, but the more limited time frame would be a small positive impact.

Norman #20063
The BLM land portions of this allotment would be incorporated into a rest-rotation grazing system with the surrounding private lands. Although not as favorable to woody species recruitment, the rest-rotation grazing system would benefit riparian areas in the allotment far above current season long grazing. Shorter seasons of use and periodic rest would allow recovery of streambank stabilizer plant species, decrease alteration levels, and promote functional riparian areas.

Pownal #09753
Pastures A and B of this allotment are currently used from fall into June. Under this alternative, the allotment would still be used primarily as winter pasture, but the season of use would end a month earlier around May 24. This would decrease summer time use on Little Battle Creek by 1 month, thereby helping warm season riparian species and decreasing livestock use on Little Battle Creek as temperatures warm.

Warneke #20017
The BLM land would be incorporated into a four-pasture grazing system. The BLM land on the Judith River would be in the NW and the south pastures. The NW pasture would be used 5/1-6/15, and the south pasture would be used 9/1-10/30. This would defer livestock use on the Judith River during the hot season, thereby aiding recruitment of cottonwood/willow species, decreasing the amount of time livestock spend on the Judith River, and allowing for some streambank recovery time.

Wolf Creek Common #20016
Currently, some of the available AUMs in this allotment are not used because of the lack of available water in the uplands later in the grazing season. Allowing earlier season use would allow for utilization of more of those AUMs which would lead to more livestock using the allotment than what has recently occurred. This could result in a negative impact to riparian areas.

4.2.4 Noxious Weeds

Implementation of the proposed action would initiate a comprehensive, cooperative weed control effort to systematically treat noxious weeds in the planning area. Priorities would be established utilizing the weed categories outlined in Chapter 3. Infested acres of noxious weeds would decrease through an aggressive, concentrated effort involving all facets of an integrated weed management program.

Wildfire could lead to a temporary increase in post-burn noxious weed infestations. Canada thistle and houndstongue are particularly problematic noxious weeds following a fire event.

Variable conditions influencing noxious weeds include:

- burn severity
- survival of desired plants
- pre-burn noxious weed cover
- survival of weeds
- reproductive capability of noxious weed species
- pre-burn and post-burn soil moisture
- revegetation

Existing infestations of Category 1 noxious weeds would be contained and suppressed utilizing herbicides and biological control. Biological control of leafy spurge has produced very favorable results within the watershed; continual monitoring, dissemination, and new releases of biocontrol agents in addition to continued herbicide control would perpetuate a steady downward trend in leafy spurge acreage. Assertive monitoring would assist in the prevention of new infestations of Category 1 weeds through early detection and control.

Existing infestations of Category 2 noxious weeds would be contained and suppressed

or eradicated utilizing herbicides and biological control. Small, relatively new infestations would be eradicated with herbicides. Established, larger infestations of Category 2 weeds would be contained and suppressed with herbicides and applicable biocontrol agents. Assertive monitoring and public awareness/outreach would assist in the prevention of new infestations of Category 2 weeds through early detection and eradication.

Category 3 noxious weeds have not been detected in the watershed area or may be found only in small, scattered, localized infestations. Assertive monitoring and public awareness/outreach would assist in the prevention of new infestations of Category 3 weeds through early detection and eradication.

4.2.5 Recreation/Visual Resource Management

Public camping would continue along travel routes under the current BLM policy of 14-day length of stay, and 100 yards off the road or trail. The dispersed campsites presently located along inventoried travel routes have been found to be in good condition, but monitoring would ensure that impacts from soil compaction, vegetation damage, and trash accumulation do not occur.

The BLM could implement restrictions on the number and acreage size of the camps, as well as the number of vehicles and/or horse trailers to prevent resource impacts. BLM would close campsites if soil and vegetation resources are damaged or destroyed. This would be applicable to both private and commercial hunting groups.

Impacts to the visual resources under this alternative would include livestock developments such as stocktanks and fences. Livestock developments would be sited away from hilltops and ridges, and preferably where vegetation or topography could screen the structures. Stocktanks located in highly visible areas would be painted using approved BLM earth tone colors.

4.2.6 Wildlife

The proposed action would have no impacts to wildlife resources on the 51 allotments listed in Tables 4.1, 4.2 and 4.3. Thirty-six of these allotments are meeting the biodiversity standard. Fifteen are not meeting the biodiversity standard due to causes other than livestock. Eight of these 15 are not meeting due to the abundance of crested wheatgrass. Three are due to the presence of noxious weeds. Three are due to limited production due to historical grazing and one is caused by conifer encroachment. In these specific allotments, the factors are historical and beyond the control of the current livestock grazing permittees/lessees. No specific grazing management changes or range improvements are proposed to remedy the issues.

There are no changes proposed for these allotments other than terms and conditions listed in the Rangeland Administration section located in Chapter 2.3.1 and the Noxious Weed section located in Chapter 2.3.4. There are no impacts which would occur from renewing grazing permits/leases with the existing mandatory terms and conditions when current livestock grazing is in conformance with standards and guidelines for rangeland health.

On allotments where noxious weeds are prevalent, the BLM would incorporate cooperative weed control agreements into the terms and conditions of the 10 year grazing permits. As cooperative agreements for weed control are implemented vegetative diversity would increase and wildlife habitat conditions would improve.

On the remaining 13 allotments (Table 4.4) that are not meeting standards due to livestock grazing, or have permit/lease modifications, proposals would include one or more of the following:

- The BLM and permittees would develop new upland water sources.
- New fence construction.
- The BLM and permittees would collaborate on new grazing systems to provide for the needs of vegetation, wildlife and the individual ranching operation.
- Seasons of use and/or livestock numbers would be modified to mitigate impacts to wildlife.

These methods would have a positive effect on wildlife in the planning area. Project implementation would be designed specifically to minimize impacts to the various species of birds, mammals, fish, amphibians and reptiles known to inhabit the planning area. Water developments would be designed to relieve livestock grazing pressure on riparian areas and distribute use to lightly grazed uplands throughout the allotment. Rest or deferred rotation grazing management would be incorporated into these allotments. Special emphasis would be placed on avoiding identified crucial winter habitats and parturition areas.

The proposed action would not negatively affect any Threatened, Endangered or Sensitive species or their associated habitat. Impacts to sage grouse would be minimal. Alteration of the current grazing use dates or deferred rotation were outlined if rest rotation was not feasible. Regardless of the type of grazing management being applied, allotments not meeting standards in the planning area would be monitored closely.

Black-tailed prairie dogs are scattered in small groups in the glaciated plains portion of the planning area. Opportunities to improve their habitat are limited. Current BLM policy allowing expansion of prairie dog towns onto public land would be continued. Prairie dog towns provide habitat for mountain plovers and other special status bird and mammal species.
The proposed action would implement an adaptive management approach to insure goals and objectives for each allotment are achieved. If management actions outlined in the proposed action do not move resource conditions toward these goals and objectives, changes would be made to correct the course of action. Adaptive management changes would be implemented under the review of a biologist and interdisciplinary team. Prior to implementation of changes, a review of potential resource impacts would be conducted. Management adjustments that could adversely affect T&E species would not be implemented. Adaptive management actions that allow for adjustments such as shortening the length of the grazing period, fencing, water developments, exclosures, and alternating the rotation patterns would not negatively affect wildlife (directly or cumulatively) because they would be selected with the needs and requirement of wildlife in mind.

The following allotments have actions proposed that could impact wildlife resources:

<u>Erie# 20030</u>
The Erie Allotment contains 10 pastures. These pastures are managed in a short duration, high intensity grazing system. Typically pastures are utilized in a modified, rest-rotation often with multiple pastures receiving rest. The proposed modification to the permit schedule would provide for early and late season use thereby facilitating implementation of this grazing system. The proposed early grazing of May 15 would facilitate increased use of crested wheatgrass and lighten the use on the native species. The proposed action would positively impact uplands by allowing

multiple rest pastures within a given year. Deer, antelope and elk would graze on the early green up of the crested wheatgrass if it is managed to remove the rank growth from the previous year. Improved native vegetation would provide increased forage for big game and nesting cover for sharp-tail, sage grouse and other ground nesting birds.

Judith River #20051

Current livestock use is concentrated on riparian habitat along the Judith River, 1.8 miles of riparian were rated as non-functional. The proposed action is to construct a short 3-wire cross fence. The cross fence would put most of the BLM riparian in the new south pasture. The fence would allow implementation of a two-pasture deferred rotation grazing system.

With the proposed action, the south pasture would be limited to six weeks of use either early in the season or later in the fall. Limiting the season of use in the south pasture to six weeks outside of the hot season compared to season long grazing would increase the possibility of cottonwood and willow recruitment. Improved growth and reproduction of the woody vegetation would provide more hiding and thermal cover for big game and many other species of small animals and migratory birds. The changes would also improve fisheries habitat by increasing stream bank vegetation of sedges and willows thereby providing greater amounts of shade and cover.

Lepley's Creek #09782

This allotment is meeting the biodiversity standard other than a small area around a spring at the head of Alder Creek. The proposed action is to fence a small area around the spring source, extend the pipeline and place the stock tank away from the spring area. The spring exclosure would eventually result in riparian vegetation at the spring source and provide habitat for upland game birds and other small animals. The exclosure fence would be constructed using BLM wildlife-friendly specifications.

M Lazy M #09860

This allotment does not contain desirable perennial vegetation that should grow on this site. It is predominantly vegetated with annual invasive species and cactus. The proposal is to change the season of use from year-long to winter use (11/1 to 6/1) and to construct an electric fence to separate the BLM from the cropland. Changing the grazing use to the dormant season would benefit the perennial vegetation and improve the wildlife forage and nesting cover. This allotment would require intensive monitoring to insure that the proposed changes are making the necessary improvements towards meeting the upland and biodiversity standards. The proposed prickly pear treatment would not be advised until there is strong evidence that the grazing changes are improving the vegetation.

Mees Cabin Trail #10085

The administrative changes proposed in this allotment would not impact wildlife habitat. Continual progress under the current grazing strategy would increase the bunchgrasses and maintain the existing shrub community.

Mendel #20057

This allotment does not meet the biodiversity standard due to the abundance of clubmoss and the lack of desirable bunchgrasses. The proposal is to change the season of use from 4/1-11/30 to 5/15-12/28. This proposal would provide more growing season deferment for the desired cool season grass species. The grazing changes would provide some increased herbaceous cover during the early season for improved sage grouse nesting cover. This allotment is very important sage grouse habitat and would be monitored intensively to ensure that nesting cover is being provided.

Milwaukee #09677

This allotment does not meet the biodiversity standard due to dominance of crested wheatgrass and .75 miles of non-functioning riparian. The proposal is to relocate an existing electric fence to separate the riparian habitat on Dog Creek from the crested wheatgrass field. The proposed fence change would provide for early season grazing on the crested wheatgrass and late season grazing on the riparian pasture in conjunction with crop use on private land. This proposal would necessitate a short water pipeline and trough into the crested wheatgrass pasture.

Deer would graze on the spring and fall green up of the crested wheatgrass if it is managed to remove the rank growth from the previous year. Upland game birds would benefit from the increased herbaceous cover in the Dog Creek riparian habitat.

Norman #20063

This allotment does not meet the biodiversity standard due to .3 miles of Functioning-at-risk riparian along the Judith River and abundant spotted knapweed and Canada thistle in the same riparian habitat. The permittee is currently working with the Natural Resource Conservation Service to implement a variety of range improvement projects on private land necessary to facilitate a proposed rest-rotation grazing system. The impacts of these improvements were analyzed in a previous environmental assessment. The BLM and permittee would develop and implement a weed control cooperative agreement. Weed control efforts would emphasize prevention of spread into the uplands. As the agreement is implemented vegetative diversity would increase and wildlife habitat conditions would improve. Rest rotation grazing would provide for a shorter season of use compared to current season long grazing and each pasture would get a periodic full season of rest. Improved growth and reproduction of the riparian vegetation would provide more hiding and thermal cover for big game and many other species of small animals and migratory birds. The changes would also improve fisheries habitat by increasing stream bank vegetation of sedges and willows thereby providing greater amounts of shade and cover.

Pownal #09753

This allotment does not meet the biodiversity standard due to .6 miles of Functioning-At-Risk riparian on Little Battle Creek , lack of perennial bunchgrasses and abundance of annual grasses. The proposal is to change the season of use from year-long to 11/1 - 5/24. Livestock grazing would be primarily winter use with only a short period of use during the early growing season. This would allow for spring use on Japanese brome and cheatgrass while deferring use on desirable native bunchgrasses. There would be minimal summer time use on Little Battle Creek, thereby helping warm season riparian species. The proposed grazing changes would promote desirable upland and riparian vegetation which would improve the wildlife forage and cover.

Smith-Bolstad Common #20013

The administrative changes proposed in this allotment would not impact wildlife habitat. Actual amount of livestock use or management would not change with this proposal. Upland and biodiversity standards are both being met under current livestock management.

TJ #09670

This allotment did not meet the biodiversity standard due to lack of bunchgrasses and excessive bare ground. The proposal is to modify grazing use from 3/1-12/31 to 6/14-9/1. This change would defer growing season use of the perennial bunchgrasses. The deferment will allow the native vegetation to complete annual growth and develop seed. Increased perennial herbaceous vegetation would provide

nesting cover for sharp-tail grouse and other ground nesting birds.

Warneke #20017
The allotment is not meeting the biodiversity standard due to 2.45 miles of Functioning-At-Risk riparian along the Judith River and abundant spotted knapweed and Canada thistle in the riparian Habitat. The proposal is to modify the season of use from year-long to 5/1–030. The BLM land would be incorporated into a four-pasture grazing system. The BLM land on the Judith River would be in the NW and the south pastures. The NW pasture would be used 5/1-6/15, and the south pasture would be used 9/1-10/30. This would defer livestock use on the riparian habitat during the hot season. Improved growth and reproduction of the riparian vegetation would provide more hiding and thermal cover for big game and many other species of small animals and migratory birds. The changes would also improve fisheries habitat by increasing stream bank vegetation of sedges and willows thereby providing greater amounts of shade and cover. The BLM and permittee would develop and implement a weed control cooperative agreement. Weed control efforts would emphasize prevention of spread into the uplands. As the agreement is implemented vegetative diversity would increase and wildlife habitat conditions would improve.

Wolf Creek Common #20016
This allotment is currently meeting the upland, riparian, and biodiversity standards. The GR#2506036 portion of the allotment would be changed to provide an earlier season of use. Livestock numbers would be reduced accordingly to accommodate the extended grazing season. Currently, some of the available AUMs in this allotment are not used because of the lack of available water in the uplands later in the grazing season. Allowing earlier season use would allow for utilization of more AUMs than what has recently occurred. There is currently suitable sage grouse habitat in the Wolf Creek drainage but no grouse leks have been identified in this area. Sage grouse nesting cover would be monitored intensively to ensure that the proposed changes do not impact that resource.

4.2.7 Fire Management

Implementation of the proposed action would not alter current wildland fire suppression management. Fire suppression would be in accordance with the Fire/Fuels Management Plan Environmental Assessment/ Plan Amendment for Montana and the Dakotas (September 2003) and the Central Montana Fire Zone, Lewistown Field Office (LFO), Fire Management Plan (September 2004).

This planning area lies mostly within the LFO “Breaks” Fire Management Unit (FMU). Implementation of the proposed action would result in the continuation of current wildland fire suppression policy for this FMU to utilize appropriate fire suppression strategies based on safety, current fire danger, values at risk, cost, suppression resource availability and predicted weather. Each fire occurrence would be evaluated on these elements and a determination made as to the most appropriate course of action. Under certain circumstances, appropriate strategies may include using indirect suppression tactics and utilization of natural fuel breaks to return fire to its natural role in the ecology of the area.

Implementation of the proposed action may result in a potential increase in fine fuel loads in allotments that would incorporate a grazing system. This increase in fine fuel loads would increase a wildland fire’s resistance to control efforts and slightly increased smoke emissions.

Prescribed burning is not proposed, however, the use of prescribed fire as a land management tool in this area may be considered in future analyses/planning efforts.

4.2.8 Cultural Resources

The impacts from this alternative would be similar to the No Action Alternative, except some minor beneficial impacts could result from management actions that reduce erosion. Proposed surface disturbing activities, especially water developments at springs and other water sources, could create negative impacts if mitigation were not incorporated into project designs. A file search and/or Class III cultural resource inventory would be conducted prior to all surface disturbance actions proposed in this watershed plan to determine the presence of historic properties within the proposed areas of potential effects. Possible benefits could include identification of additional resources during inventories. Currently, none of the proposed actions appear to have the potential to adversely affect historic properties.

4.2.9 Surface Water

This alternative would improve plant cover and increase infiltration rates, thereby increasing the time of concentration and the quantity of water stored on the BLM lands within the planning area.

Water quantity and quality affected by flow diversion, impoundments, and stream channel modifications would not change.

The water quality impaired streams in the planning area would be addressed by improving riparian and upland condition adjacent to impaired streams and decreasing the amount of sediment, fecal coliform, nitrates, etc. being contributed to waterbodies. Under this alternative, livestock would spend less time on water quality impaired streams.

Any impacts to surface water from the range improvement projects would be unmeasurable.

Under the proposed action, one pipeline extension and an additional stock tank would be installed within the planning area. The pipeline extension and stock tank would be fed from a shallow groundwater well on private land. This would cause a small increase in consumption of shallow groundwater in the planning area. All stock tanks would be installed according to BLM specifications with flow control devices to minimize impacts to the shallow ground water aquifers.

4.2.10 Soils

Grazing management changes which result in allotments making significant progress toward meeting rangeland health standards would create a positive impact to soils in the planning area. Rangelands meeting or exceeding health standards exhibit a higher percentage of increaser forage species, fewer annual grasses and forbs, increased plant vigor and root mass, a decrease in the percentage of bare ground, and an increase in available water holding capacity and infiltration. These characteristics greatly benefit rangeland soils.

The cumulative impact of these proposed projects would have an effect on the soil resource, though it would be minimal. The vast area encompassed by the watershed and mitigation measures associated with each of the projects would minimize or eliminate negative impacts. The proposed projects are spread among the 64 allotments and approximately 1,375,000 total watershed acres.

Soil could be affected by implementation of proposed range improvement projects in two ways, surface disturbances and compaction. Spillage of equipment lubricants, fluids, and fuels could also adversely impact soils associated with the range improvement projects.

Construction equipment and vehicular traffic associated with the proposed projects would

cause soil compaction; severity would be directly related to soil type, frequency, and weight (lbs./sq. inch) of equipment. Compaction alters soil structure – decreasing porosity, infiltration rate, air space, and available water holding capacity. A combination of these factors would decrease the vegetative capacity and increase the potential for water and wind erosion of affected areas. Mitigation would include limitation of unnecessary traffic associated with the projects and limitation of traffic during wet periods. Excessively wet soils would be defined as soil moisture high enough to:

- foul blades, augers or equipment
- create 3" deep ruts
- conglomerate mud on tires and tracks

Construction and farm equipment and vehicular traffic associated with the proposed projects would also create surface disturbances which could lead to accelerated wind and/or water erosion. Mitigation would include timely rehabilitation of all project-induced surface disturbances as directed by the authorized officer. All seed mixes would be recommended and approved by the authorized officer. Seed would be State of Montana certified or registered seed (or certified/registered by the state of origin); certification tags would be made available to the authorized officer for inspection before the seed is planted. Seed would be planted using a disc drill equipped with depth bands (or a suitable depth regulator to ensure proper depth of planting) and packer wheels. Seed would be drilled between one-half inch (1/2") and three-quarters inches (3/4") deep. Where drilling is not possible, seed would be broadcasted and the area would be harrowed or raked to cover the seed. Care would be exercised to prevent burying the seed deeper than one inch (1"). If seed must be broadcasted, the drill seeding rate provided by the authorized officer would be doubled. The seeding would be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth would not be made before completion of the first growing season following seeding. Seeding would be completed in the late fall/early winter or early spring between the dates of 10/15 and 05/15. Seedings would not be made when the soil is frozen or snow covered. If moisture conditions are favorable in late summer, seeding may be completed between 08/15 and 09/15, allowing a minimum of 45 days for germination and seedling development before the seedlings go dormant. Late summer plantings should be attempted only when soil moisture is adequate at or very near the surface and to a substantial depth in the profile.

Silt fence would be properly installed to control offsite movement of any required soil stockpiles in areas with slopes greater than 15%, and adjacent to waterways and stream channels. Topsoil would not be used as padding in trenches or for any other use as a construction material. Standard erosion control practices would be employed to minimize erosion during construction operations. If a high groundwater table is encountered requiring dewatering, water would be pumped and discharged in a manner that would minimize sedimentation and prevent off-site erosion and bottom scour in adjacent waterways. Discharge to the surface would be allowable if vegetation is adequate to effectively function as a filter medium. If vegetation is inadequate, bale filters or other appropriate measures would be used to limit siltation.

Drainage control structures would be used to:

- transport surface runoff across disturbed areas with minimal erosion
- direct surface drainage away from disturbed areas
- provide downgradient control of runoff and sediment from all disturbed areas

These structures include drainage channels and water bars. Water bars would be used to direct intercepted runoff away from disturbed areas. Spacing intervals would be:

Slope Gradient %	Typical Spacing (ft)
5 - 15	150
16-30	100
Greater than 30	75

Soils could also be impacted by fluid spills, including engine oil, hydraulic oil, gear lube, anti-freeze, and fuel (gasoline or diesel fuel). These spills could severely affect soil in localized areas; concentrations may be capable of soil sterilization. Mitigation would include removal and approved disposal of soil from localized spill areas followed by replacement with clean soil and rehabilitation as directed by the authorized officer. Equipment leaks and drips would be fixed immediately upon discovery by the contractor, permittee/lessee, or BLM personnel.

All barbed wire fence construction would utilize steel T posts and wooden set posts at corners, stress panels and fence breaks. Wheeled equipment may be used to install the posts and wire creating a short-term impact on vegetation and soils adjacent to the fence alignment. New roads or trails would not be initiated along proposed fence routes, though permittees/lessees would be authorized to travel adjacent to fences for maintenance purposes. New fences would alter traditional livestock movement patterns and could create trailing along alignments. Minimal impacts to soils if trailing occurs would be concentrated to the linear fence routes.

All proposed stockwater pipelines would be installed utilizing rotary chain trenchers. Rotary trenchers create a surface disturbance only 6-12" wide, minimizing soil disturbance and potential negative impacts. Trenches would be backfilled immediately upon pipe installation and pressure test completion. Reseeding of the backfilled trenches is generally not required due to the low level of surface disturbance and natural encroachment of adjacent vegetation. Stocktank installation associated with proposed pipeline construction projects would impact soils. The small footprint required during the construction phase (20' x 20') would minimize short-term impacts. Long-term impacts would result from concentrated livestock use around the stocktanks and associated trailing to and from the water source. Mitigation would include proper tank placement relative to resource concerns and livestock grazing management objectives. Stocktanks would not be placed on narrow ridges, in confined spaces or corridors, in riparian areas, or on slopes greater than 5%.

Proposed vegetation treatments could disturb approximately 10 acres. The farming operations associated with these projects would compact soils, creating the possibility for accelerated wind and water erosion. Mitigation would include prompt completion of all initiated projects and adherence to seeding requirements discussed above. Long-term impacts would be positive as native vegetation establishes a natural, effective soil protective mechanism.

4.2.11 Air Quality

The proposed action would not impact air quality.

4.2.12 Economics/Sociology

The proposed action would create a short-term economic impact on permittees/lessees with allotments not meeting rangeland health standards. The BLM would require grazing management changes or range improvements to meet upland and/or riparian health standards. The permittees/lessees would be responsible for a portion of most proposed projects. In the long term, however,

proposed changes would lead to healthy rangelands and sustainable livestock grazing. There would be no impacts to permittees/lessees whose allotments are meeting rangeland health standards.

The management actions and range improvements included in the proposed action would generally improve the efficiency of livestock grazing on public lands and the condition of those lands. Permit/lease renewals would allow for continuation of public lands ranching within the planning area.

4.2.13 ACECs/Wilderness

Implementation of the proposed action would not impact the Square Butte ACEC/WSA.

Chapter 5
Consultation and Coordination

The Upper Arrow Creek Watershed Area EA was prepared by a BLM interdisciplinary team including:

- Dan Brunkhorst, Team Leader/ Rangeland Management Specialist
- Betty Westburg, Range Technician
- Adam Carr, Rangeland Management Specialist
- Fred Roberts, Wildlife Biologist
- Chad Krause, Hydrologist
- Vinita Shea, Rangeland Management Specialist
- Zane Fulbright, Archaeologist
- Rod Sanders, Recreation Specialist
- Bruce Reid, Forester

Other BLM personnel who provided assistance:

- Jerry Majerus, NEPA Coordinator
- Dan Frank, Cartographic Technician
- Mike Barrick, Range Technician
- Willy Frank, Assistant Field Manager, Resources
- Kay Haight, Editorial Assistant
- Craig Flentie, Public Affairs Specialist

Other agency personnel involved in or notified during the planning process:

- Tom Stivers, Anne Tews, Gary Bertelloti, Bill Gardner, Cory Loecker, Grant Grisak/ Montana Fish, Wildlife and Parks.
- Lou Haneberry, Marc Wilson, Kathy Burchett/ U.S. Fish & Wildlife Service
- Clive Rooney/ Montana Department of Natural Resource and Conservation
- Jim Sparks, Craig Ferris/ Fergus and Chouteau County Weed Districts
- Ron Wiseman, Jason Oltrogge/U.S. Forest Service, Lewis and Clark National Forest/Judith Ranger District.
- Ted Hawn, Lanny Walker, Mark McLendon/ Natural Resource Conservation Service

All interested parties, grazing permittees/ lessees and base property owners were contacted by mail or phone during the planning process. The BLM met with all permittees/lessees whose allotments were not meeting one or more of the rangeland health standards due to livestock grazing. On March 14 and March 18, 2008, two open-house, public meetings were held in Lewistown and Stanford, Montana.

Appendix A
Land Use Plan Guidance

- **Energy Mineral Resources:** No surface occupancy restrictions will be used to protect critical paleontology sites and archeology sites. Seasonal and distance restrictions will be included in oil and gas leases to mitigate impacts to wildlife habitat **(JVP)**.

- **Non-energy Mineral Resources:** Federal minerals are available for exploration and development unless withdrawn **(JVP)**.

- **Paleontology:** Major paleontological resources of scientific interest will be protected **(JVP)**.

- **Soils:** Soil productivity will be maintained or improved by increasing vegetation cover and reducing erosion **(JVP, Standards and Guidelines)**.

- **Water Resource Management:** Surface and ground water quality will be maintained to meet or exceed state and federal water quality standards **(JVP, Standards and Guidelines)**.

- **Vegetation Management:** The ecological status will be improved or maintained to achieve a plant community of good (late seral) to excellent (potential natural community) on 80% of the public lands within 15 years of implementation of activity plans **(JVP)**.

  Public lands that are in satisfactory (good and excellent) ecological condition will be maintained. Public lands with unsatisfactory (poor and fair) ecological condition will be managed according to multiple use objectives based on ecological site potential for specific uses **(Standards and Guidelines)**.

  About 40% of the vegetation will continue to be allocated to livestock grazing and about 60% will continue to be allocated to watershed protection and wildlife forage and cover **(JVP)**.

  The quality and quantity of summer wildlife forage will be improved by improving the reproduction and availability of palatable forbs for deer and antelope. Deer and antelope winter range (especially woody species) will be maintained and/or improved. Existing sagebrush stands will be maintained at a canopy cover of 15 to 50% with an effective height over 12 inches **(JVP, Standards and Guidelines)**.

  The quality and quantity of nesting, brood rearing and winter habitat for upland game birds and waterfowl nesting habitat will be improved by providing residual upland grass and forb cover **(JVP, Standards and Guidelines)**.

  Land will be managed for succulent vegetation production, including a variety of forbs, and big and silver sagebrush will be maintained on sage grouse wintering and nesting areas with a canopy coverage of 15 to 50% and an effective height of 12 inches. Woody vegetation will be maintained or improved for sharp-tailed grouse cover **(JVP, Standards and Guidelines)**.

- **Riparian and Wetland Management:** Riparian-wetland areas will be maintained or improved based on proper functioning condition and desires plant community. Riparian-wetland objectives will be initially accomplished through livestock grazing methods at current stocking levels. If grazing methods are not successful in meeting management objectives, necessary actions will be taken to meet those objectives **(JVP, Standards and Guidelines)**.

All manageable riparian areas will have management plans implemented to maintain, restore or improve riparian areas to achieve a healthy and productive ecological condition for maximum long-term benefits and values **(Standards and Guidelines)**.

- **Land Treatments:** Land treatments will be used to meet watershed, grazing management and wildlife objectives but will be applied only where grazing management alone will not accomplish the desired result **(JVP)**.

- **Noxious Plants:** Noxious plants will be controlled or eradicated through integrated pest management in order to maintain native rangelands **(JVP, Standards and Guidelines)**.

- **Wildlife and Fisheries Management:** Suitable habitat for all wildlife species will be maintained or enhanced. The emphasis for habitat maintenance and development will be on present and potential habitat for sensitive, threatened and/or endangered species, nesting waterfowl, crucial wildlife winter ranges, non-game habitat and fisheries **(JVP, Standards and Guidelines)**.

- **Prairie Dog Management:** Prairie dog towns will be maintained or managed based on the values or problems encountered **(JVP)**.

- **Elk and Bighorn Sheep Management:** Habitat will be provided for elk in the Musselshell Breaks consistent with the MT Dept of FWP Elk Management Plan **(JVP)**.

- **Recreation:** The recreational quality of public land and resources will be maintained and/or enhanced to ensure enjoyable recreational experiences. Recreation emphasis will be to develop and maintain opportunities for dispersed recreational activities such as hunting, scenic and wildlife viewing and driving for pleasure.

- **Off-Highway Vehicle Use:** BLM will restrict OHV use on BLM land year-long or seasonally to designated roads and trails or close specific areas to protect resource values, i.e., protect vegetation and soils to maintain watersheds and water quality, reduce user conflicts, and reduce harassment of wildlife and provide habitat security **(JVP)**.

- **Visual Resource Management:** Activities will be managed to comply with VRM policies **(JVP)**.

- **Cultural:** Cultural resources will be properly managed through a systematic program of identification and evaluation. The level of conflict between cultural resources and other land and resource uses will be reduced in compliance with existing laws/regulations **(JVP)**.

- **Fire Management:** Fire will be managed in the manner most cost effective and responsive to resource management objectives **(JVP)**.

  Prescribed fire will be utilized only under specific conditions and may be administered on an individual basis in grassland, sagebrush and/or conifer types to improve wildlife habitat and vegetation production **(JVP)**.

  Intensive suppression of wildfire will be applied to areas with high resource values, improvements, recreation sites, administrative sites, sagebrush and juniper, fire sensitive woody riparian species, and/or cultural values and may also be used to prevent fire from spreading to adjoining private property and structures **(JVP)**.

  Conditional suppression will be applied to areas with low resource values or to areas not warranting intensive suppression actions and costs. Conditional suppression actions will be used in grass/shrub fuel types, Missouri Breaks fuel types and mountain timber fuel types **(JVP)**.

- **Forest Management:** Minor forest products may be harvested from the Breaks on a selected sustained yield basis with wildlife habitat objectives in mind **(JVP)**.

- **Lands:** Resource values will be protected or enhanced when considering applications or requests for Rights of Ways, leases and permits. Acquisitions will be pursued as opportunities arise through exchange or purchase with willing proponents and/or sellers **(JVP)**.

- **Access to BLM Land:** Access will be pursued to BLM land where no legal public access exists or where additional access to major blocks of BLM land is needed **(JVP)**.

- **Signing:** Appropriate signs and posters will be used to promote safety and convenience for visitors and users, define boundaries, identify management practices, provide information about geographic and historic features and protect vulnerable land areas and resources from misuse **(JVP)**.

Appendix B
Standards for Rangeland Health

Standards are statements of physical and biological condition or degree of function required for health sustainable rangelands. Achieving or making significant and measurable progress towards these functions and conditions is required of all uses of public rangelands. Historical data, when available, should be used when assessing progress towards these standards.

Standard #1: Uplands Are In Proper Functioning Condition

This means that soils are stable and provide for capture, storage and safe release of water appropriate to soil type, climate and landform. The amount and distribution of ground cover (i.e., litter, live and standing dead vegetation, microbiotic crusts, and rock/gravel) for identified ecological site(s) or soil-plant associations are appropriate for soil stability.

Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface scaling and compaction layers below the soil surface is minimal. Ecological processes including hydrologic cycle, nutrient cycle and energy flow are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential and there is a diversity of species characteristic of and appropriate to the site. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

Physical Environment

- erosional flow patterns
- surface litter
- soil movement by water and wind
- soil crusting and surface sealing
- compaction layer
- rills
- gullies

Biotic Environment

- cover distribution
- community richness
- community structure
- exotic plants
- plant status
- seed production
- recruitment
- nutrient cycle

Standard #2: Riparian and Wetland Areas Are In Proper Functioning Condition

This means that the functioning condition of riparian-wetland areas is a result of the interaction among geology, soil, water and vegetation.

Riparian-wetland areas are functioning properly when adequate vegetation, landform or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood water retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for native fish production, waterfowl breeding, and other uses appropriate for the area that will support greater species richness.

The riparian-wetland vegetation is a mosaic of species richness and community structure serving to control erosion, shade water, provide thermal protection, filter sediment, aid floodplain development, dissipate energy, delay flood water, and increase recharge of groundwater where appropriate to landform.

The stream channels and flood plain dissipate energy of high water flows and transport sediment appropriate for the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity), climate, and landform.

Soils support appropriate riparian-wetland vegetation, allowing water movement, filtering sediment, and slowing ground water movement for later release. Stream channels are not entrenching beyond natural climatic variations and water levels maintain appropriate riparian-wetland species.

Riparian areas are defined as land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

Hydrologic

- floodplain inundated in relatively frequent events (1-3 years)
- amount of altered streambanks
- sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region); and upland watershed not contributing to riparian degradation.

Erosion/Deposition

- plain and channel characteristics; i.e., rocks, coarse and/or woody debris adequate to dissipate energy
- point bars are being created and older point bars are being vegetated
- lateral stream movement is associated with natural sinuosity
- system is vertically stable
- stream is in balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Vegetation

- reproductive and diverse age class of vegetation
- diverse composition of vegetation
- species present indicate maintenance of riparian soil moisture characteristics
- streambank vegetation is comprised of those plants or plant communities that have deep binding root masses capable of withstanding high streamflow events
- utilization of trees and shrubs
- riparian plants exhibit high vigor
- adequate vegetative cover present to protect banks and dissipate energy during high flows
- where appropriate, plant communities in the riparian area are an adequate source of woody debris

Standard #3: Water Quality Meets Montana State Standards

This means that surface and ground water on public lands fully support designated beneficial uses described in the Montana Water Quality Standards. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

- dissolved oxygen concentration
- pH
- turbidity
- temperature
- fecal coliform
- sediment
- color
- toxins
- others: ammonia, barium, boron, chlorides, chromium, cyanide, endosulfan, lindane, nitrates, phenols, phosphorus, sodium, sulfates, etc.

Standard #4: Air Quality Meets Montana State Standards

This means that air quality on public lands helps meet the goals set out in the State of Montana Air Quality Implementation Plan. Efforts will be made to limit unnecessary emissions from existing and new point or non-point sources.

The BLM management actions or use authorizations do not contribute to air pollution that violates the quantitative or narrative Montana Air Quality Standards or contributes to deterioration of air quality in selected class area.

As indicated by:

Section 176(c) Clean Air Act which states that activities of all federal agencies must conform to the intent of the appropriate State Air Quality Implementation Plan and not:

- cause or contribute to any violations of ambient air quality standards
- increase the frequency of any existing violations
- impede the State's progress in meeting their air quality goals

Standard #5: Habitats are provided to maintain healthy, productive and diverse populations of native plant and animal species, including special status species (federally threatened, endangered, candidate or Montana species of special concern as defined in BLM Manual 6840, Special Status Species Management)

This means that native plant and animal communities will be maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant lifeforms. Where native communities exist, the conversion to exotic communities after disturbance will be minimized. Management for indigenous vegetation and animals is a priority. Ecological processes including hydrologic cycle, and energy flow, and plant succession are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential, and there is a diversity of plant and animal species characteristic of and appropriate to the site. The environment contains components necessary to support viable populations of a sensitive/threatened and endangered species in a given area relative to site potential. Viable populations are wildlife or plant populations that contain an adequate number of reproductive individuals distributed on the landscape to ensure the long-term existence of the species. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

- plants and animals are diverse, vigorous and reproducing satisfactorily noxious weeds are absent or insignificant in the overall plant community
- spatial distribution of species is suitable to ensure reproductive capability and recovery
- a variety of age classes are present
- connectivity of habitat or presence of corridors prevents habitat fragmentation
- species richness (including plants, animals, insects and microbes) are represented
- plant communities in a variety of successional stages are represented across the landscape.

Appendix C
Guidelines for Livestock Grazing Management

Guidelines for management of herbivory (including domestic animals and wildlife) are preferred or advisable approaches to ensure that standards can be met or that significant progress can be made toward meeting the standard(s). Responsible state and Federal wildlife agencies must be involved in this management if standards are to be achieved.

Guidelines are provided to maintain or improve resource conditions in upland and riparian habitats. In both riparian and upland habitats, these guidelines focus on establishing and maintaining proper functioning conditions. The application of these guidelines is dependent on individual management objectives. Desired future conditions in plant communities and streambank characteristics will be determined on a case-by-case basis.

Lewistown GUIDELINE #1:
Grazing will be managed in a manner that will maintain the proper balance between soils, water, and vegetation over time. This balance varies with location and management objectives, historic use, and natural fluctuations, but acceptable levels of use can be developed that are compatible with resource objectives.

Lewistown GUIDELINE #2:
Manage grazing to maintain watershed vegetation, species richness, and flood plain function. Maintain riparian vegetative cover and structure to trap and hold sediments during run-off events to build streambanks, recharge aquifers, and dissipate flood energy. Grazing management should promote deep-rooted herbaceous vegetation to enhance streambank stability. Where non-native species are contributing to proper functioning conditions, they are acceptable. Where potential for palatable woody shrub species (willows, dogwood, etc.) exists, promote their growth and expansion within riparian zones.

Lewistown GUIDELINE #3:
Pastures and allotments will be managed based on their sensitivity and suitability for livestock grazing. Where determinations have not been previously documented, suitability for grazing will be determined by: topography, slope, distance from water, vegetation habitat types, and soil types must be considered when determining grazing suitability. Unsuitable areas should be excluded from grazing.

Lewistown GUIDELINE #4:
Management strategies for livestock grazing will ensure that long-term resource capabilities can be sustained. End of season stubble heights, streambank moisture content, and utilization of herbaceous and woody vegetation are critical factors which must be evaluated in any grazing strategy. These considerations are essential to achieving long-term vegetation or stream channel objectives and should be identified on a site-specific basis and used as terms and conditions.

Lewistown GUIDELINE #5:
Grazing will be managed to promote desired plants and plant communities of various age classes, based on the rate and physiological conditions of plant growth. Management approaches will be identified on a site-specific basis and implemented through terms and conditions. Caution should be used to avoid early spring grazing use when soils and streambanks are wet and susceptible to compaction and physical damage that occurs with animal trampling. Likewise, late summer and fall treatments in woody shrub communities should be monitored closely to avoid excessive utilization.

Lewistown GUIDELINE #6:
The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.

Lewistown GUIDELINE #7:
Locate facilities (e.g., corrals, water developments) away from riparian-wetland areas.

Lewistown GUIDELINE #8:
When provided, supplemental salt and minerals should not be placed adjacent to watering locations or in riparian-wetland areas so not to adversely impact streambank stability, riparian vegetation, water quality, or other sensitive areas (i.e., key wildlife wintering areas). Salt and minerals should be placed in upland sites to draw livestock away from watering areas or other sensitive areas and to contribute to more uniform grazing distribution.

Lewistown GUIDELINE #9:
Noxious weed control is essential and should include: cooperative agreements, public education, and integrated pest management (mechanical, biological, chemical).

Lewistown GUIDELINE #10:
Livestock management should utilize practices such as those referenced by the NRCS published prescribed grazing technical guide to maintain, restore or enhance water quality.

Lewistown GUIDELINE #11:
Grazing management should maintain or improve habitat for federally listed threatened, endangered, and sensitive plant and animals.

Lewistown GUIDELINE #12:
Grazing management should maintain or promote the physical and biological conditions to sustain native populations and communities.

Lewistown GUIDELINE #13:
Grazing management should give priority to native species. Non-native plant species should only be used in those situations where native seed is not readily available in sufficient quantities, where native plant species cannot maintain or achieve the standards, or where non-native plant species provide an alternative for the management and protection of native rangelands.

Lewistown GUIDELINE #14:
Allotment monitoring determines how on-going management practices are affecting the rangeland. To do so, the evaluations should be based on: measurable management objectives; permanent and/or repeatable monitoring locations; and short-term and long-term data.

Appendix D
Drought Policy

Bureau of Land Management
Policy for Administering Public Land Grazing
In
Montana, North and South Dakota
During Periods of Drought

Introduction

Livestock grazing is but one of the activities that BLM manages on the public lands. Drought stresses all resources: vegetation, wildlife, soils, watershed, and timber as well as livestock. Unfortunately, only livestock and human activity can be readily controlled or restricted from access to public lands. The other resources are either immobile or not readily controlled. This policy deals with livestock use and implements provisions of existing laws and regulations. Other uses that may require special consideration during severe drought may be addressed in separate policy statements or actions.

Vegetation cover is one part of productive rangelands because it strongly affects soil moisture. When drought reduces the total forage produced and the normal residual vegetation (standing and down plant material) is used by livestock, insects, and other grazing animals; soil moisture and temperature are affected. Soil temperatures are lowered by the residual cover during warm periods and are raised by the residual cover during cold periods. Moisture intake and penetration into soils is keyed to the amount and type of residual cover found on a soil/ecological site. In fact, with little or no residual cover on rangelands, moisture events will likely produce little effective penetration into the soil. Residual cover provides protection for soils, vegetation, wildlife, watersheds, and for the many other resources dependent upon good vegetation and livestock management.

Authority

This document implements provisions of:

- Taylor Grazing Act of June 28, 1934, as amended;
- Federal Land Policy and Management Act of 1976, as amended;
- Public Rangelands Improvement Act of 1978;
- Regulations in 43 code of Federal Regulations, Group 4100(43 CFR 4100).

Policy

It is the policy and objective of the BLM to: manage the public lands and authorize livestock grazing under the principles of multiple use and sustained yield; provide for the orderly administration of grazing by domestic livestock on the public lands; and provide for the conservation and protection of soil and vegetation resources.

Accomplishment of these objectives becomes more difficult during periods of range depletion caused by drought. Normal grazing schedules and livestock management practices may have to be modified. Additional coordination, consultation, and data exchange between livestock operators and Bureau personnel will be required, over and above that level normally practiced. Appropriate state agencies and other interested parties will have to be involved at appropriate times and kept informed at all time.

The principal thrust of the policy and procedures in this document, and other regulatory and procedural requirements not repeated here, will be for the livestock operator and BLM to jointly develop strategies for livestock use on public land during and following drought. Strategies selected should be those that best protect rangeland resources while minimizing impacts on the operator to the extent possible. To that end, every degree of flexibility provided by the laws and implementing regulations will be available to authorized officers of the Bureau.

Voluntary adjustments in livestock use of public lands should be sought at the earliest date it becomes apparent that "normal" grazing schedules cannot be followed; or, if followed, would result in degradation of long-term resource productivity. The earlier an agreement can be reached or a decision is made that "normal" grazing schedules cannot be followed; the more opportunities livestock operators will have to consider alternatives to minimize impacts on his or her operation. Waiting until the last minute before scheduled turnout to make a determination or decision will reduce the options available to both the operator and the Bureau.

In keeping with established Bureau policies and priorities, efforts to manage public rangeland under drought conditions will be directed first to allotments with resource concerns such as "I" category allotments. Specific allotments in the "M" and "C" categories can also be considered high priority when resource values or conditions so require. Regardless of the category assigned to an allotment, operators should be aware of the procedures and flexibilities available for dealing with drought condition.

BLM fully expects that the vast majority of livestock operators will recognize the need for and voluntarily make adjustments in livestock use of public lands if the extended drought continues. These adjustments will be recognized during the permitting process and grazing bills will be adjusted accordingly. In those situations where agreement cannot be reached, authorized officers of the Bureau have the final responsibility and accountability for ensuring that public lands are not permanently damaged by improper use.

If issuance of a decision concerning livestock use becomes necessary, the procedure specified in 43 CFR 4160 will be followed. Briefly, this procedure calls for a proposed decision, setting forth the proposed action.

Proposed decisions are issued by the Field Office Manager. The permittee then has 15 days in which to protest the proposed decision and set forth reasons why he or she believes the proposed decision is in error. The authorized officer then reviews the proposed decision in light of the protestant's statement of reasons and any other information that may bear on the case. At the conclusion of the review, a final decision is prepared and served on appropriate parties. Any person whose interest is adversely affected by a final decision may appeal the decision for the purpose of a hearing before an Administrative Law Judge.

It should be further understood that final decisions can be modified or rescinded, if the conditions that existed when the decision was issued no longer exist. If significant amounts of precipitation occur during the growing season, producing significant changes in the amount of moisture available to plants, this may cause decisions to be reconsidered. The consultation and coordination process will be used to obtain livestock operator involvement in such cases.

If a proposed decision is not protested, during the 15-day period, it becomes the final decision of the authorized officer without further action.

In cases such as the need for temporary changes caused by conditions such as drought, final decisions may become effective upon issuance (43 CFR 4160.3(f) 4110.3-2(a)).

Procedures

The following guidelines and procedures are intended to provide the data, flexibility and direction for public land managers and livestock operators to develop strategies and make decisions during drought conditions. Consultation and coordination with livestock operators and other interested parties will be carried out during all procedural steps.

I. Winter Assessment (Mid-November - January)

A. Analysis

1. Review past season's monitoring results. Analyze plant growth, actual use, occurrence of insect infestations, and especially the use of "rest" pastures.

2. Analyze precipitation records and distribution patterns from the National Weather Service, local cooperators, BLM, and other agencies. Tabulate moisture departures from normal levels and timing of precipitation in relation to past years' growing season.

3. In "I" allotments where there is concern because there is less residual cover, effective precipitation well below normal, rest pastures already used, etc., measure soil moisture in representative areas. Where available, use RAWS/OMNI sites, existing soil moisture stations, etc. Additional soil moisture samples are to be taken at the rooting depth of major forage species in representative areas using techniques found in agency manuals/handbooks and professional literature and experienced personnel.

B. Action

1. Where it is apparent resource degradation might occur if drought continues, begin to notify operators through letters and news releases that the coming year's livestock grazing might be affected.

2. Set up range user meetings in affected communities to discuss available information and possible actions to prevent range resource damage.

3. Encourage operators to make needed changes in their grazing schedules, including applying for non-use. If non-use is taken then activated, BLM will waive the $10 service fee in accordance with 43 CFR 4130.8.3. Authorized officers may issue refund or credit of grazing fees under 43 CFR 4130.8-2(b).

4. Meet with individual operators when available information indicates a particular allotment is affected by severe drought condition. Attempt to reach agreement on alternative grazing strategies if conditions do not change.

II. Late Winter and Spring Assessment (February - April)

A. Analysis

1. Review precipitation and soil moisture data for winter and early spring.

2. Review the effects of winter grazing use; snow pack influence for stock water, soil temperatures, etc-

3. Continue soil moisture measurements where problems are apparent or in areas of concern. Measurements at rooting depth to measure available water for plants will be especially important during this period.

4. Assess availability of livestock water, in consultation with permittees.

B. Action

1. If drought conditions are continuing, or becoming more severe, follow up winter letters and news releases with more releases and letters that update the situation. Conduct meetings with Grazing and District Advisory Boards. Meetings are encouraged with other concerned individuals and agencies as a part of the grazing management strategy.

2. Contact remaining operators who have not voluntarily made needed changes. Where you believe you have enough information to indicate an allotment is in severe drought condition, meet with the operator to review and explain the information you have and attempt to reach agreement on a grazing strategy. If an agreement cannot be reached and, especially if the allotment has a relatively early turnout date, issue a proposed decision. The extent of use adjustment contained in this decision (delayed turnout, reduction in numbers or duration, total exclusion, etc.) will depend on your assessment of all the factors involved. These include past grazing use, range condition, residual cover, precipitation, soil moisture and the land use objectives for the allotment.

3. If soil moisture is below the middle line on Figure 1, delay turnout until key forage plants have grown to approximately one-half their normal height (for most of our native grass species about 6 inches).

III. Continuing Assessment (throughout grazing season)

A. Analysis

1. Continue to closely monitor precipitation in "I" allotments and areas of concern. Attention is directed to determining effective (soil moisture) growing season precipitation.

2. Closely monitor utilization of key plant species and key areas. Remember to consider management objectives when selecting key species and areas.

3. Continue to measure soil moisture in "I" allotments and areas of concern.

4. Monitor factors other than livestock grazing, such as insect infestations, congregations of wildlife, availability of livestock water, etc.

B. Action

1. If soil moisture drops below the middle line on Figure 1 and utilization has reached objective levels or a maximum of 30 percent utilization has occurred, livestock are to be removed.

2. If soil moisture remains unacceptable (below the bottom line in Figure 1) during most of the spring and early summer with little or no growth in primary forage species for livestock (i.e., range readiness has not been reached), advise affected permittees that fall and winter ranges may not be available for use during the current year. Also advise that production in subsequent years may be affected if plant basal areas and density have been severely reduced.

3. For those permittees in "I", allotments with AMPs having available standing forage in rest pastures or fall or winter use pastures, advise the permittees that livestock must be removed from public lands; when consumption of standing forage has reached objective levels or a maximum of 50 percent.

4. Adjust monitoring plans to collect data concerning plant death, loss of basal area, density, and yield for analysis and use in later years.

IV. Other Considerations

1. The use of salt, mineral, and certain mineral supplements as necessary to overcome natural shortages of minerals in rangeland forage may be authorized as necessary to provide for proper range management(4130.3-2(c)).

2. Maintenance feeding on public lands is not authorized except under very unusual short-term conditions and by permit only. Maintenance feeding during drought conditions is specifically excluded.

3. Applications for a maintenance feeding permit due to poor forage conditions associated with drought should be denied and livestock removed or not allowed.

Definitions

Available water. That portion of water in a soil that plants can extract from the soil. Generally measured per unit volume of soil.

Basal area (range). The area of ground surface covered by the stem or stems of a range plant, usually measured 1 inch above the soil in contrast to the full spread of the foliage.

Density. (1) The number of individual plants per unit area; (2)Refers to the relative closeness of plants to one another.

Flexibility. The ability to alter the grazing management plan to meet changing conditions.

Flushing. Feeding female animals a concentrated feed shortly before and during the breeding period for the purpose of stimulating ovulation.

Growing season. In temperate climates, that portion of the year when temperature and moisture are usually most favorable for plant growth.

Key species. (1) Forage species whose use serves as our indicator to the use of associated species; (2) Those species which must, because of their importance, be considered in the management program.

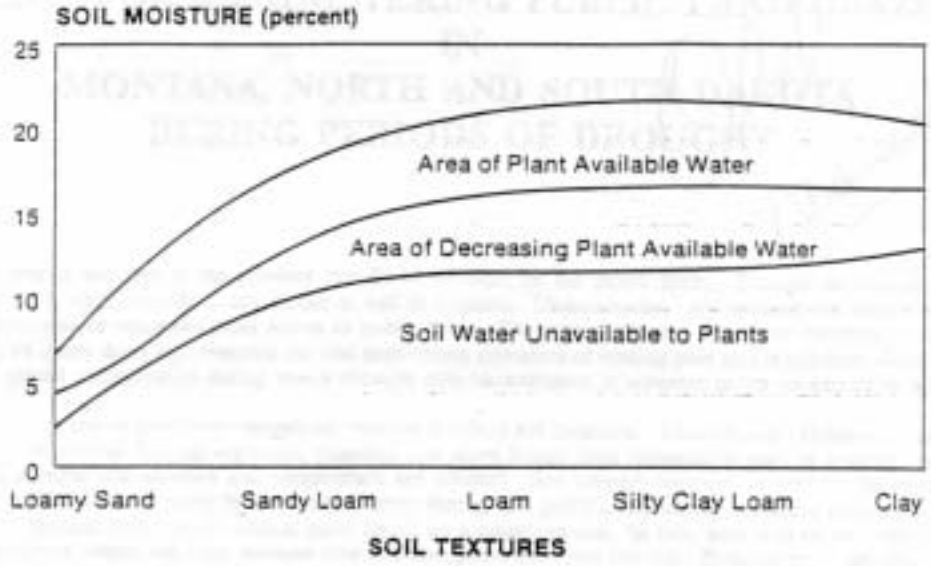
Maintenance feeding. Supplying feed to range animals when available forage is too limited to meet their minimum daily requirement (examples are cubes, pellets, baled or loose hay).

Phenology. The study of periodic biological phenomenon such as flowering, seeding, etc., especially as related to climate.

Range readiness. The defined stage of plant growth at which grazing may begin under a specific management plan without permanent damage to vegetation or soil.

Supplemental feed. A feed which supplements the forage available from the public lands and is provided to improve livestock nutrition and good animal husbandry and rangeland management practices. An example is salt or mineral block. Creep feeders to supplement feed for calves and supplemental feeding to "flush" cattle and sheep for breeding may be authorized on public lands when compatible with the resource management objectives.

FIGURE 1
Plant Available Water Capacities



When using Figure 1, the following information should be kept in mind.

a. Soil moisture is measured the depth of plant roots or to a root limiting layer. It will vary by plant(s) and soil type.

b. Soluble salts, gravel and heavy clay will decrease plant available water capacity.

c. Organic matter, good soil structure will increase plant available water capacity (The capacity increases about 1 percent for each 1 percent of organic matter).

d. Soils with water restricting layers like naturally compact subsoil, shallow bedrock or stratification can increase plant available water capacity of the overlying soil layers.

e. Soils that are deep, medium textured and uniform can have decreased plant available water but allow for deeper rooting.

Figure 1 was developed from research done in the 1980s in northern and eastern Montana. Published research was reviewed by soil scientists, range scientists and plant physiologists. These data are currently found in USDA, NRCS soil survey manuals, engineering manuals, irrigation guides, ARS and University research. It is tested and well accepted information.

The lines on the graph represent the relationship of various soil texture and soil water available to plants common to the Northern Gt. Plains and nearby Rocky Mountains.

For site specific application the lines should be adjusted to reflect the needs of key forage species on a given soil in area of interest. For example, a western wheat plant is capable of extracting more soil moisture from a silty clay soil than is a bluegrass plant.

The area above the top line is the amount of soil water in excess of what a given soil type can hold. This soil water will likely move down, through and

out of the soil root zone and possibly become ground water.

The area between the middle and top lines represents the soil moisture contents which most plants need for normal growth.

The area below the bottom line indicates soil moisture that is not available to the plant; e.g., if there is less than 4 percent moisture in a loamy sand soil within the root depth of the plant, it will not grow.

The area between the bottom and middle lines indicates a moisture level that is marginal to plant growth. The plant is becoming stressed at this point and, if further stressed by removal or damage to the top growth, it will begin to lose vigor, roots and thus its ability to grow. It is not unusual to reach this moisture level during late summer in much of Montana and other semi-arid areas.

Appendix E
Standards for Rangeland Health Determinations Summary

Allotment Name	Allotment No.	Standard 1 (Uplands)	Standard 2 (Riparian)	Standard 3 (Water Quality)	Standard 5 (Biodiversity)	Cause (by Standard)
ANDERSON COULEE	10027	No	No	No	No	1, 2, 3 and 5 caused by noxious weeds and annual invasives.
ANTELOPE COULEE	09668	Yes	n/a	n/a	Yes	
ARROW CREEK	09783	Yes	n/a	n/a	Yes	
BELT CREEK	09666	Yes	n/a	n/a	Yes	
BIG COULEE	09764	Yes	n/a	n/a	Yes	
BIG COULEE EAST	09656	Yes	n/a	n/a	Yes	
BIG LAKE	09833	No	No	Yes	No	1,2 and 5 not met due to crested wheatgrass and salination.
BOYCE C IND.	20015	Yes	n/a	n/a	Yes	
BROWN COULEE	20014	Yes	Yes	No	Yes	3 due to MDEQ listing of the Judith River.
BURNSIDE	20018	No	No	Yes	No	1,2 and 5 due to crested wheatgrass and historical clubmoss.
CASSIDY PLACE	09679	Yes	n/a	n/a	Yes	
COWBOY CREEK	09831	Yes	n/a	n/a	Yes	
COWBOY STEELE CREEK	19814	Yes	n/a	n/a	Yes	
CUTBANK CREEK	20007	No	n/a	n/a	No	1 and 5 due to crested wheatgrass.
DAVIS CREEK	09861	Yes	No	No	No	2,3 and 5 due to noxious weeds and MDEQ listing of Arrow Creek.
DEMARS	20026	No	No	Yes	No	1,2 and 5 due to crested wheatgrass and At-Risk rating of Dog Creek.
EAGLE	09856	Yes	n/a	n/a	Yes	
EAST PEAK	19844	Yes	n/a	n/a	Yes	
ERIE	20030	No	n/a	n/a	No	1 and 5 due to crested wheatgrass and lack of perennial bunchgrasses.
GALLATIN	20011	No	n/a	n/a	No	1, 3 and 5 due to lack of bluebunch wheatgrass and Dog Creek listing.
GREEN-ROYCE	20034	Yes	n/a	n/a	Yes	
JIGGS FLAT	09787	Yes	Yes	Yes	No	5 not met due to noxious weeds.
JONES CONE	20005	Yes	n/a	n/a	Yes	

Allotment Name	Allotment No.	Standard 1 (Uplands)	Standard 2 (Riparian)	Standard 3 (Water Quality)	Standard 5 (Biodiversity)	Cause (by Standard)
JUDITH RIVER	20051	Yes	No	No	No	2,3 and 4 not met due to noxious weeds and livestock concentrations.
KATZMAN	20022	Yes	n/a	n/a	Yes	
KELLY BOTTOM	04835	Yes	n/a	n/a	Yes	
KENDLE PLACE	09676	Yes	No	Yes	Yes	2 due to FAR rating of Lacey Creek.
KINKELAAR	20044	No	n/a	n/a	No	1 and 5 due to the presence of crested wheatgrass.
LANDER CROSSING	09852	Yes	Yes	Yes	Yes	
LEACH PLACE	09759	Yes	n/a	n/a	Yes	
LEPLEYS CREEK	09782	No	No	Yes	Yes	1 and 2 due to FAR rating and non-native species.
LINSE	20052	Yes	n/a	n/a	Yes	
LOST LAKE RANCH	09725	Yes	No	Yes	Yes	2 due to FAR rating of unnamed tributary to Lepley's Creek.
M LAZY M	09860	No	n/a	n/a	No	1 and 5 due to lack of bunchgrasses and annual invasives.
MEES CABIN TRAIL	10085	No	n/a	n/a	No	1 and 5 due to lack of bunchgrasses in plant community.
MEES CABIN TRAIL	10085	No	n/a	n/a	No	1 and 5 due to lack of bunchgrasses in plant community.
MENDEL	20057	No	n/a	n/a	No	1 and 5 due to abundance of clubmoss.
MERRILL CREEK	09828	Yes	n/a	n/a	Yes	
MERRIMAC	09776	Yes	Yes	Yes	Yes	
MILWAUKEE	09677	No	No	Yes	No	1,2 and 5 due to crested wheatgrass, NF rating of Dog Creek.
NORMAN	20063	Yes	No	No	No	2, 3 and 5 due to the FAR rating of the Judith River and noxious weeds.
NORMAN PLACE	09788	Yes	Yes	No	Yes	Due to the MDEQ listing of the Judith River.
OLSEN	05099	No	n/a	n/a	No	1 and 5 not meeting due to crested wheatgrass.
OLSON	20087	Yes	No	No	Yes	2 not meeting due to FAR rating on Dog Creek, 3 due to MDEQ listing.
POSTHILL CREEK	09754	No	n/a	n/a	Yes	1 not meeting due to abundance of increase and invasive species.
POWNAL	09753	No	No	Yes	No	1, 2 and 5 not meeting due to absence of perennial grass and FAR rating.
ROSE CREEK	20100	No	No	Yes	No	Standards not met due to crested wheatgrass, clubmoss and MDEQ listing.

Allotment Name	Allotment No.	Standard 1 (Uplands)	Standard 2 (Riparian)	Standard 3 (Water Quality)	Standard 5 (Biodiversity)	Cause (by Standard)
SALT CREEK	20047	Yes	n/a	n/a	Yes	
SHAW CREEK	19835	Yes	n/a	n/a	Yes	
SMITH-BOLSTAD COMMON	20013	Yes	n/a	n/a	Yes	
SMITH-BOLSTAD COMMON	20013	Yes	n/a	n/a	Yes	
SMITH-BOLSTAD COMMON	20013	Yes	n/a	n/a	Yes	
SUFFOLK NORTH	20080	No	n/a	n/a	no	1 and 5 not meeting due to crested wheatgrass.
SURPRISE CK BADLANDS	19691	Yes	n/a	n/a	Yes	
T J	09670	No	n/a	n/a	No	1 and 5 not meeting due to absence of bunchgrasses and excessive bareground.
UPPER COFFEE CREEK	09746	Yes	n/a	n/a	Yes	
UPPER COWBOY CREEK	09827	Yes	Yes	Yes	No	5 not met due to conifer encroachment.
UPPER SHONKIN	09749	Yes	n/a	n/a	Yes	
UPPER WILSON COULEE	09706	Yes	n/a	n/a	Yes	
WALLING	20089	Yes	n/a	n/a	Yes	
WALTERS	20088	No	No	Yes	No	Standards not met due to FAR rating, MDEQ listing and lack of bunchgrasses.
WARNEKE	20017	Yes	No	No	No	Standards not met due to NF rating and MDEQ listing.
WELLER PLACE	10086	Yes	n/a	n/a	Yes	
WEST SHONKIN CREEK	09830	Yes	n/a	n/a	Yes	
WHERLEY	20091	No	n/a	n/a	No	1 and 5 not met due to clubmoss and lack of bunchgrasses.
WOLF CREEK COMMON	20016	Yes	Yes	No	Yes	3 not met due to MDEQ listing of Judith River.
WOLF CREEK COMMON	20016	Yes	Yes	No	Yes	3 not met due to MDEQ listing of Judith River.
WOLF CREEK COMMON	20016	Yes	Yes	No	Yes	3 not met due to MDEQ listing of Judith River.
WOLF CREEK COMMON	20016	Yes	Yes	No	Yes	3 not met due to MDEQ listing of Judith River.
WOODCOCK	09853	Yes	n/a	n/a	Yes	

Appendix F
Upland Health Assessments and Monitoring Schedule

Allotment Name	Allotment Number	Ecol. Site Index Score/seral stage	Trend	Range Health Indicators (departure from expected for the site)	Transect UTM Coordinates	Monitoring Schedule*
ANDERSON COULEE	10027	42 Fair	0 Static	none-moderate	Z12 E607737 N5269019	5 years
ANTELOPE COULEE	09668	67 Good	10 Upward	none-slight	Z12 E578061 N5278300	10 years
ARROW CREEK	09783	72 Good	7 Upward	none-slight	Z12 E558978 N5257840	10 years
BELT CREEK	09666	44 mid seral	4 Upward	none-slight	Z12 E503712 N5267914	10 years
BIG COULEE	09764	78 PNC	10 Upward	none-slight	Z12 E573523 N5261525	10 years
BIG COULEE EAST	09656	85 PNC	10 Upward	none-slight	Z12 E578513 N5258588	10 years
		54 late seral	5 Upward	none-slight	Z12 E579654 N5263242	10 years
		55 late seral	8 Upward	none-slight	Z12 E573554 N5257600	10 years
BIG LAKE	09833	32 mid seral	-1 Down	none-moderate	Z12 E544261 N5278021	10 years
BOYCE C IND.	20015	70 late seral	10 Upward	none-slight	Z12 E605919 N5272949	10 years
BROWN COULEE	20014	70 late seral	8 Upward	none-slight	Z12 E605564 N5267738	5 years
BURNSIDE	20018	20 early seral	0 Static	none-moderate	Z12 E827287 N5268255	5 years
CASSIDY PLACE	09679	81 late seral	10 Upward	none-slight	Z12 E572185 N5255097	10 years
COWBOY CREEK	09831	45 mid seral	8 Upward	none-moderate	Z12 E565009 N5259373	10 years
COWBOY STEELE CREEK	19814	55 late seral	3 Upward	none-slight	Z12 E562215 N5263822	10 years
		85 PNC	10 Upward	none-slight	Z12 E571270 N5252031	10 years
CUTBANK CREEK	20007	19 early seral	2 Upward	none-moderate	Z12 E627848 N5276421	10 years
DAVIS CREEK	09861	90 PNC	7 Upward	none-slight	Z12 E557650 N5246081	5 years
		40 mid seral	6 Upward	none-moderate	Z12 E555238 N5244531	5 years
DEMARS	20026	30 mid seral	1 Upward	none-moderate	Z12 E625079 N5264774	10 years
EAGLE	09856	75 PNC	10 Upward	none-slight	Z12 E577659 N5257357	10 years
EAST PEAK	19844	Undet.	5 Upward	none-moderate	Z12 E541145 N5253710	10 years
		Undet.	6 Upward	none-moderate	Z12 E541044 N5253500	10 years
ERIE	20030	35 mid seral	7 Upward	none-slight	Z12 E626540 N5260245	5 years
		51 late seral	9 Upward	none-moderate	Z12 E629222 N5258982	5 years
GALLATIN	20011	40 mid seral	4 Upward	none-moderate	Z12 E613326 N5281810	5 years
GREEN-ROYCE	20034	85 PNC	8 Upward	none-moderate	Z12 E607717 N5278810	10 years
JIGGS FLAT	09787	71 mid seral	7 Upward	none-moderate	Z12 E553902 N5248667	5 years
JONES CONE	20005	80 PNC	10 Upward	none-slight	Z12 616907 N5277983	10 years

Allotment Name	Allotment Number	Ecol. Site Index Score/seral stage	Trend	Range Health Indicators (departure from expected for the site)	Transect UTM Coordinates	Monitoring Schedule*
JUDITH RIVER	20051	73 late seral	10 Upward	none-slight	Z12 E607064 N5262190	3-5 years
KATZMAN	20022	60 late seral	2 Upward	none-slight	Z12 E621086 N5282166	10 years
KELLY BOTTOM	04835	80 PNC	7 Upward	none-moderate	Z12 E603742 N5274768	10 years
KENDLE PLACE	09676	Undet.	Undet.	timbered parcel	no upland inventory	10 years
KINKELAAR	20044	45 mid seral	0 Static	none-moderate	Z12 E636178 N5283258	10 years
LANDER CROSSING	09852	90 PNC	9 Upward	none-slight	Z12 E507019 N5274849	10 years
LEACH PLACE	09759	63 mid seral	9 Upward	none-slight	Z12 E575942 N5255133	10 years
LEPLEYS CREEK	09782	36 mid seral	1 Upward	none-moderate	Z12 E543052 N5259502	3-5 years
	09782	65 late seral	7 Upward	none-slight	Z12 E536432 N5268254	3-5 years
	09782	35 mid seral	4 Upward	none-moderate	Z12 E543052 N5259502	3-5 years
LINSE	20052	44 mid seral	4 Upward	none-slight	Z12 E596790 N526887	10 years
LOST LAKE RANCH	09725	55 late seral	8 Upward	none-moderate	Z12 E537567 N5268969	5 years
M LAZY M	09860	40 mid seral	2 Downward	moderate	Z12 E564323 N5253557	3-5 years
MEES CABIN TRAIL	10085	40 mid seral	0 Static	none-moderate	Z12 E627174 N5286315	5 years
MEES CABIN TRAIL	10085	35 mid seral	1 Static	none-moderate	Z12 E626664 N5286072	5 years
MENDEL	20057	32 mid seral	3 Downward	moderate	Z12 E625804 N5268844	5 years
MERRILL CREEK	09828	56 late seral	5 Upward	none-moderate	Z12 E544473 N5259059	10 years
MERRIMAC	09776	69 late seral	5 Upward	none-moderate	Z12 E543522 N5249338	10 years
		63 late seral	4 Upward	none-moderate	Z12 E542526 N5250074	10 years
		51 late seral	3 Upward	none-moderate	Z12 E543547 N5250279	10 years
MILWAUKEE	09677	20 early seral	0 Static	moderate-extreme	Z12 E625300 N5263708	3 years
NORMAN	20063	79 PNC	10 Upward	none-slight	Z12 E606889 N5251955	3-5 years
NORMAN PLACE	09788	39 mid seral	5 Upward	none-moderate	Z12 E604280 N5253157	5 years
OLSEN	05099	19 early seral	1 Static	moderate-extreme	Z12 E618189 N5279219	5 years
OLSON	20087	75 PNC	10 Upward	none-slight	Z12 E621750 N5279588	5 years
POSTHILL CREEK	09754	64 late seral	6 Upward	none-moderate	Z12 E537142 N5263457	5 years
POWNAL	09753	48 mid seral	8 Upward	none-slight	Z12 E563512 N5253833	3-5 years
		55 late seral	2 Upward	none-moderate	Z12 E562267 N5252383	3-5 years
ROSE CREEK	20100	20 early seral	1 Static	moderate	Z12 E627300 N5267712	5 years
SALT CREEK	20047	63 late seral	8 Upward	none-slight	Z12 E613206 N5261992	10 years
SHAW CREEK	19835	Undet.	Undet.	timbered parcel	no upland inventory	10 years
SMITH-BOLSTAD COMMON	20013	38 mid seral	6 Upward	none-slight	Z12 E609783 N5270101	10 years
SMITH-BOLSTAD COMMON	20013	38 mid seral	6 Upward	none-slight	Z12 E609783 N5270101	10 years
SMITH-BOLSTAD COMMON	20013	38 mid seral	6 Upward	none-slight	Z12 E609783 N5270101	10 years

Allotment Name	Allotment Number	Ecol. Site Index Score/seral stage	Trend	Range Health Indicators (departure from expected for the site)	Transect UTM Coordinates	Monitoring Schedule*
SUFFOLK NORTH	20080	47 mid seral	5 Upward	none-moderate	Z12 E624227 N5259861	10 years
SURPRISE CK BADLANDS	19691	50 late seral	9 Upward	none-slight	Z12 E561614 N5247839	10 years
T J	09670	20 early seral	1 Static	moderate	Z12 E581652 N5271925	3-5 years
UPPER COFFEE CREEK	09746	75 PNC	10 Upward	none-slight	Z12 E585422 N5255469	10 years
UPPER COWBOY CREEK	09827	75 PNC	6 Upward	none-slight	Z12 E557647 N5256161	10 years
UPPER SHONKIN	09749	Undet.	Undet.	timbered parcel	no upland inventory	10 years
UPPER WILSON COULEE	09706	73 late seral	7 Upward	slight-moderate	Z12 E581360 N5273238	10 years
WALLING	20089	73 late seral	10 Upward	none-slight	Z12 E605316 N5277227	10 years
		90 PNC	10 Upward	none-slight	Z12 E607212 N5277874	10 years
WALTERS	20088	40 mid seral	1 Static	moderate	Z12 E624210 N5278722	3-5 years
WARNEKE	20017	77 PNC	7 Upward	none-moderate	Z12 E606368 N5260646	3-5 years
WELLER PLACE	10086	47 PNC	5 Upward	none-moderate	Z12 E623408 N5276099	10 years
WEST SHONKIN CREEK	09830	Undet.	Undet.	timbered parcel	no upland inventory	10 years
WHERLEY	20091	37 mid seral	0 Static	moderate	Z12 E630527 N5261086	5 years
WOLF CREEK COMMON	20016	35 mid seral	1 Static	moderate	Z12 E599894 N5265416	5 years
		60 late seral	0 Static	none- moderate	Z12 E601142 N5274243	5 years
		57 late seral	8 Upward	none-slight	Z12 E600737 N5274485	5 years
		79 PNC	10 Upward	none-slight	Z12 E603866 N5272795	5 years
		85 PNC	10 Upward	none-slight	Z12 E601553 N5265196	5 years
		85 PNC	8 Upward	none-slight	Z12 E597248 N5263666	5 years
		65 late seral	3 Upward	none-slight	Z12 E597148 N5266587	5 years
WOODCOCK	09853	67 late seral	6 Upward	none-slight	Z12 E538782 N5263657	10 years

* The monitoring schedule was established based on current resource conditions and the need to assess impacts of proposed changes. The schedule does not include random visits or monitoring of restoration projects.

Appendix G
Riparian Health Assessments and Monitoring Schedule

Allotment Name	Allotment No.	Stream Name	Health Rating	Distance (miles)	Meeting Standards?	Reason Not Meeting Standards	Monitoring Schedule
ANDERSON COULEE	10027	Judith River	PFC, FAR(u)	1.2	NO	making progress	5 years
BIG LAKE	09833	Big Lake	FAR	22.9 acres	NO	abandoned railroad ROW	10 years
BROWN COULEE	20014	Judith River	PFC	0.5	YES		10 years
BURNSIDE	20018	Rose Creek	NF	1	NO	making progress	5 years
DAVIS CREEK	09861	Arrow Creek	FAR(u)	1.3	NO	making progress	10 years
DAVIS CREEK	09861	Cottonwood Creek	PFC	0.4	YES		10 years
DAVIS CREEK	09861	Davis Creek	FAR(u)	0.4	NO	making progress	10 years
DAVIS CREEK	09861	Ole Coulee	FAR(u)	0.3	NO	making progress	10 years
DEMARS	20026	Dog Creek	FAR(u)	0.4	NO	making progress	10 years
GALLATIN	20011	Dog Creek	PFC	2.01	YES		10 years
JIGGS FLAT	09787	Cottonwood Creek	PFC	1.25	Yes		10 years
JUDITH RIVER	20051	Judith River	FAR, NF	3.1	NO	livestock, weeds	3 years
KENDLE PLACE	09676	Lacey Creek	FAR(u)	0.28	NO	making progress	10 years
LANDER CROSSING	09852	Highwood Creek	PFC	0.25	YES		10 years
LEPLEYS CREEK	09782	Alder Creek	FAR	0.19	NO	livestock	5 years
LOST LAKE RANCH	09725	Unk. Trib. To Lepleys Creek	FAR(u)	0.27	NO	making progress	10 years
MERRIMAC	09776	Unk. Trib. To Mansfield Creek	PFC	0.1	YES		10 years
MILWAUKEE	09677	Dog Creek	NF	0.75	NO	livestock	3 years
NORMAN	20063	Judith River	PFC, FAR	0.6	NO	livestock	3 years
NORMAN PLACE	09788	Judith River	PFC	0.5	YES		10 years
OLSON	20087	Dog Creek	FAR(u)	1.7	NO	making progress	10 years
POWNAL	09753	Little Battle Creek	FAR	0.6	NO	livestock	5 years
ROSE CREEK	20100	Rose Creek	NF	0.75	NO	channel incisement	10 years
UPPER COWBOY CREEK	09827	Unk. Trib. To Little Battle Creek	PFC	0.21	YES		10 years
WALTERS	20088	Cut Bank Creek	NF	1	NO	recent landslide	10 years
WALTERS	20088	Taffy Creek	FAR(u)	2.15	NO	making progress	10 years
WARNEKE	20017	Judith River	PFC, FAR	4	NO	livestock	3 years
WOLF CREEK COMMON	20016	Judith River	PFC	0.55	YES		10 years

Appendix H
Proposed Range Improvement Projects

Allotment Name	Allotment No.	Proposed Range Improvement Projects	Project Area
Judith River	20051	Cross-fence	650'
Lepley's Creek	09782	Pipelinestocktank	630'
		Exclosure/fence	1/4 mile
M Lazy M	09860	electric fence	1/3 mile
		vegetation treatment	10 acres
Milwaukee	09677	Pipeline/stocktank	900'
		Electric fence	1/2 mile
Norman	20063	Pipeline*	5945'
		Cross-fence*	1,591
		*Previously analyzed in EA# MT-060-2007-70	

Appendix I
Current Allotment Information

Allotment Name	Allotment No.	Public Acres	AUMs	% Public Land	Livestock No.	Season of Use
ANDERSON COULEE	10027	1739	201	59	86 cattle	11/01 - 2/28
ANTELOPE COULEE	09668	40	10	100	1 cattle	3/1 - 2/28
ARROW CREEK	09783	2876	227	17	150 cattle	3/1 -5/30 and 9/1 - 2/28
BELT CREEK	09666	240	48	100	4 cattle	3/1 - 2/28
BIG COULEE	09764	320	23	100	2 cattle	3/1 - 2/28
BIG COULEE EAST	09656	5273	366	100	68 cattle	6/10 - 11/20
BIG LAKE	09833	34	15	100	1 cattle	3/1 - 2/28
BOYCE C INDIVIDUAL	20015	1681	215	100	36 cattle	5/1 - 10/31
BROWN COULEE	20014	1420	240	52	66 cattle	3/1 - 3/31 and 9/1 - 2/28
BURNSIDE	20018	240	69	100	6 cattle	3/1 - 2/28
CASSIDY PLACE	09679	298	26	100	4 cattle	5/1 - 10/31
COWBOY CREEK	09831	160	25	100	3 cattle	6/1 - 12/31
COWBOY STEELE CREEK	19814	3450	215	100	31 cattle	6/1 - 12/31
CUTBANK CREEK	20007	40	12	100	1 cattle	3/1 - 2/28
DAVIS CREEK	09861	3080	213	100	18 cattle	3/1 - 2/28
DEMARS	20026	40	11	100	1 cattle	3/1 - 12/31
EAGLE	09856	520	37	100	3 cattle	3/1 - 2/28
EAST PEAK	19844	80	25	100	6 cattle	6/1 - 10/1
ERIE	20030	800	146	100, 55	1 cattle, 98 cattle	4/1 - 11/30, 6/16 - 9/03
GALLATIN	20011	170	51	100	14 cattle	6/1 - 9/15
GREEN-ROYCE	20034	400	68	100	5 cattle	3/1 - 2/28
JIGGS FLAT	09787	720	47	100	4 cattle	3/1 - 2/28
JONES CONE	20005	420	65	100	5 cattle	3/1 - 2/28
JUDITH RIVER	20051	1417	205	100	31 cattle	5/1 - 11/15
KATZMAN	20022	120	10	100	1 cattle	3/1 - 2/28
KELLY BOTTOM	04835	240	36	100	3 cattle	3/1 - 2/28
KENDLE PLACE	09676	40	3	100	1 cattle	5/15 - 10/20
KINKELAAR	20044	400	96	100	8 cattle	3/1 - 2/28
LANDER CROSSING	09852	160	23	100	2 cattle	3/1 - 2/28
LEACH PLACE	09759	538	39	100	5 cattle	4/1 - 12/1
LEPLEYS CREEK	09782	514	49	100	4 cattle	3/1 - 2/28
LINSE	20052	400	89	100	7 cattle	3/1 - 2/28
LOST LAKE RANCH	09725	121	11	100	1 cattle	5/1 - 11/1
M LAZY M	09860	95	9	100	1 cattle	5/1 - 11/30

Allotment Name	Allotment No.	Public Acres	AUMs	% Public Land	Livestock No.	Season of Use
MEES CABIN TRAIL	10085	1785	161	67	79 cattle	6/15 - 9/15
MEES CABIN TRAIL	10085	1785	66	52	42 cattle	6/15 - 9/15
MENDEL	20057	320	97	100	12 cattle	4/1 - 11/30
MERRILL CREEK	09828	320	36	100	7 cattle	6/1 - 10/31
MERRIMAC	09776	400	59	100	10 cattle	5/1 - 10/31
MILWAUKEE	09677	120	46	100	4 cattle	3/1 - 2/28
NORMAN	20063	696	138	100	14 cattle	3/1 - 2/28
NORMAN PLACE	09788	66	17	100	1 cattle	3/1 - 2/28
OLSEN	05099	540	91	100	8 cattle	6/1 - 2/28
OLSON	20087	602	84	100	7 cattle	3/1 - 2/28
POSTHILL CREEK	09754	28	4	100	1 cattle	6/16 - 10/15
POWNAL	09753	1929	115	100	10 cattle	3/1 - 2/28
ROSE CREEK	20100	560	174	100	22 cattle	4/1 - 11/30
SALT CREEK	20047	40	8	100	1 cattle	3/1 - 2/28
SHAW CREEK	19835	40	6	100	1 cattle	4/1 - 11/30
SMITH-BOLSTAD COMMON	20013	680	40	100	20 yearlings & cattle	6/16 - 8/15
SMITH-BOLSTAD COMMON	20013	680	41	100	20 cattle	7/1 - 8/31
SMITH-BOLSTAD COMMON	20013	680	36	42	21 cattle	5/16 - 9/15
SUFFOLK NORTH	20080	160	48	100	4 cattle	3/1 - 2/28
SURPRISE CK BADLANDS	19691	670	39	100	9 cattle	6/1 - 9/30
T J	09670	120	37	100	3 cattle	3/1 - 12/31
UPPER COFFEE CREEK	09746	165	31	100	4 cattle	4/1 - 11/30
UPPER COWBOY CREEK	09827	120	7	100	1 cattle	3/1 - 2/28
UPPER SHONKIN	09749	160	16	100	3 cattle	5/15 - 10/20
UPPER WILSON COULEE	09706	41	10	100	1 cattle	3/1 - 2/28
WALLING	20089	1028	119	100	10 cattle	3/1 - 2/28
WALTERS	20088	400	78	100	7 cattle	3/1 - 2/28
WARNEKE	20017	760	132	100	11 cattle	3/1 - 2/28
WELLER PLACE	10086	81	14	100	2 cattle	3/1 - 2/28
WEST SHONKIN	09830	40	4	100	1 cattle	3/1 - 2/28
WHERLEY	20091	360	84	100	17 cattle	5/1 - 9/25
WOLF CREEK COMMON	20016	6480	462	48	221 cattle	7/1 - 10/30
WOLF CREEK COMMON	20016	6480	473	57	137 cattle	5/1 - 10/31
WOLF CREEK COMMON	20016	6480	297	27	196 cattle	5/1 - 10/31
WOLF CREEK COMMON	20016	6480	159	100	53 cattle	7/1 - 9/30
WOODCOCK	09853	40	13	100	1 cattle	3/1 - 2/28

Appendix J
Montana Noxious Weed List

Montana noxious weeds are categorized according to the following criteria:

- *Category 1* noxious weeds are weeds that are currently established and generally widespread in many counties of the state. Management criteria include awareness and education, containment, and suppression of existing infestations and prevention of new infestations. These weeds are capable of rapid spread and render land unfit or greatly limit beneficial uses.

    - Canada Thistle (*Cirsium arvense*)
    - Field Bindweed (*Convolvulus arvensis*)
    - Whitetop or Hoary Cress (*Cardaria draba*)
    - Leafy Spurge (*Euphorbia esula*)
    - Russian Knapweed (*Centaurea repens*)
    - Spotted Knapweed (*Centaurea maculosa*)
    - Diffuse Knapweed (*Centaurea diffusa)*
    - Dalmatian Toadflax (*Linaria dalmatica)*
    - St. Johnswort (*Hypericum perforatum*)
    - Sulfur (Erect) Cinquefoil (*Potentilla recta*)
    - Common tansy (*Tanacetum vulgare*)
    - Ox-eye Daisy (*Chrysanthemum leucanthemum* L
    - Houndstongue (*Cynoglossum officinale* L.)
    - Yellow toadflax (*Linaria vulgaris)*

- *Category 2* noxious weeds have recently been introduced to the state or are rapidly spreading from their current infestation sites. These weeds are capable of rapid spread, rendering lands unfit for beneficial uses. Management criteria includes awareness and education, monitoring and containment of known infestations, and eradication where possible.

    - Dyers Woad (*Isatis tinctoria*)
    - Purple Loosestrife or Lythrum (*Lythrum salicaria*, *L. virgatum*, and any hybrid crosses thereof).
    - Tansy Ragwort (*Senecio jacobea* L)
    - Meadow Hawkweed Complex (*Hieracium pratense*,
    - *H. floribundum*, *H. piloselloides*)
    - Orange Hawkweed (*Hieracium aurantiacum* L.)
    - Tall Buttercup (*Ranunculus acris* L)
    - Tamarisk [Saltcedar] (*Tamarix* spp.)
    - Perennial pepperweed (*Lepidium latifolium*)

- *Category 3* noxious weeds have not been detected in the state or may be found only in small, scattered, localized infestations. Management criteria includes awareness and education, early detection and immediate action to eradicate infestations. These weeds are known pests in nearby states and are capable of rapid spread and render land unfit for beneficial uses.

    - Yellow Starthistle (*Centaurea solstitialis*)
    - Common Crupina (*Crupina vulgaris)*
    - Rush Skeletonweed (*Chondrilla juncea)*
    - Eurasian watermilfoil (*Myriophyllum spicatum*)
    - Yellow flag iris (*Iris pseudacoru)*

Appendix K
Monitoring and Evaluation

Key areas would be established for upland and riparian utilization. Existing upland study sites would continue to be used and additional sites may need to be established. Additional riparian study sites would need to be established. There should be a minimum of one upland and one riparian study site per pasture unless no significant riparian habitat exists in the pasture. Monitoring would be conducted utilizing the key species dominant at each study site. In most cases, key upland species would be western wheat grass, green needle and blue bunch wheat grass.

Monitoring would be collected by permittees/lessees and the BLM. Permittees/lessees would be responsible to constantly monitor livestock distribution, utilization levels, and stubble heights on their allotments to ensure that livestock grazing is consistent with established guidelines. Monitoring would be conducted according to site specific goals and objectives for each allotment. Permittees/lessees would be encouraged to develop cooperative monitoring efforts with the BLM. Upland study plots are marked by UTM coordinates listed in Appendix F. Riparian reaches are described in Appendix G. BLM would monitor sites (riparian and upland) according to a variety of factors including:

- Proper Functioning Condition
- Functioning At Risk
- Non-Functioning
- Upland trend
- Priority of allotment
- Change of management actions
- Causal factors

BLM personnel will be available to provide monitoring assistance for permittees/lessees.

First order fire effects would be monitored following the prescribed burns.

Review of monitoring data would occur yearly. An evaluation taking into account applicable watershed impacts would need to be completed within 10 years for permit renewal. The BLM may require permit/lease holders to monitor conditions on allotments in the future.

The monitoring schedule was established based on current resource conditions and the need to assess impacts of proposed changes. Random visits will also be taken to the allotments listed above to assess overall conditions. The schedule shown above does not include monitoring of restoration or prescribed fire projects.

Appendix L
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